INFANT MORTALITY

SECOND SPECIAL REPORT

BY

DR. HELEN MacMURCHY

TORONTO

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

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Infant Mortality.

THE HONOURABLE W. J. HANNA,
Registrar-General for Ontario.

SIR,—I have the honour to submit, in accordance with instructions, a Second Special Report on Infant Mortality, and to state in regard to the first Report, that as far as can be ascertained, it seems to have been the first instance in which such a report was issued by any Government. There have been special enquiries and reports *re* the Birth-Rate, and also articles on Infant Mortality incorporated in many reports, but this seems to be the first instance in which a Government ordered a Special Report to be made, which was intended mainly to arouse popular interest in this important subject. To this fact no doubt its success was largely due, the entire issue being very soon exhausted. It had a good circulation in Ontario, and also in the other Provinces. Requests for copies came from as far away as Victoria, B.C., and some went to Halifax.

A good many enquiries were also received from the United States, especially from libraries and from the Russell Sage Foundation (Department of Child Helping), as well as from the American Association for the Study and Prevention of Infant Mortality. The officers of the last named Association were especially friendly, and signified not only their own interest in the Report and approbation of it, but mentioned that the Press Clipping Bureau employed by them had sent them a number of press references to it. Officials of the United States Government at Washington also wrote to the Department with reference to the Report, especially Dr. Cressy L. Wilbur, Chief Statistician to the Bureau of the Census, Department of Commerce and Labour, who refers in his letter to the statement made on page 34 of the Report—"Nothing can be done until we know where the babies are, and when they arrive," and adds "This the key to the situation, so far as the Vital Statistics side is concerned."

Members of the medical profession in Ontario have also written to the Department about the Report, and some of the medical journals, as well as the newspapers, have drawn special attention to it. Among the experts who have expressed approval of the efforts of the Department to draw attention to this subject, are Walter Kruesi, of Boston; Dr. Richard Cabot, of Boston, and Mr. Benjamin Broadbent, of Huddersfield, England, who made himself famous when he was Mayor of Huddersfield by cutting down the Infant Mortality rate from 184 per thousand to 97 per thousand.

A Canadian journalist living in Orillia, sent a copy of the Report to Mr. Broadbent, and Mr. Broadbent wrote from his home in Huddersfield to this Department saying, "Have read it with the greatest possible interest and delight."

A COMPLEX SUBJECT.

Infant Mortality is such a complex subject that it may be approached from many points of view. There is no part of Sanitary administration which does not bear a relation to it, and again, there are certain aspects of it that appear very simple.

The Poor Man's Baby and the Rich Man's Baby.

Take the difference between the death rate of the children of the poor and the children of the rich. In Erfurt, Germany, Wolf's Statistics show:—

505 Babies out of 1,000 died under 1 year old among the working classes.
173 Babies out of 1,000 died under 1 year old among the middle classes.
89 Babies out of 1,000 died under 1 year old among the rich classes.

In Birmingham, Dr. Robertson, M.O.H., stood up in the Council Chamber last April and told them that within two miles of where he stood there died in 1909, between 1,500 and 2,000 babies; good, robust, "thick-set" English babies, who ought not to die. And that the Infant Mortality in the upper and middle classes was 50 per thousand, but among the poor it was 200 per thousand.

Dr Robertson continued:—What was the cause of all this mortality? The work done in Birmingham, and in other places during the past 15 or 20 years, had led to a general opinion beyond which they could not go, that it was largely due to the ignorance of the mothers. Therefore, to get rid of the high mortality the mothers must be educated. But the education of mothers was an exceedingly difficult matter. One frequently heard statements about the callousness of mothers, and the failings of a few were attached to the whole group of mothers in the poorer classes. This was not so. Anyone who had worked among the mothers of the poorer classes knew that they had just as much love for their babies as those of the better classes, and that they would take advice readily from anyone they recognized as capable of giving advice. In all our towns there was now less opportunity than ever for the classes to mix with one another. He thought that was one of the great blots of the age. So many of the towns had a west end and so many had an east end, to which very few of the west-end people ever went. And east-end mothers were getting careless and thriftless because they had not before them the example of more careful, thrifty, and intelligent people. It was highly important that the west end should mix with the east end. Referring to the poverty question, Dr. Robertson said children were damaged in a way that could not be ascribed to the poverty of the mothers. A bottle-fed baby in a poverty-stricken house got watered milk. And the mother in a poverty-stricken home would give practically all the food available to the husband, because he had to go out and work; she would give all she could to her children, and would leave a quite insufficient quantity for herself. A poor mother with a family was the most self-denying person he knew of. Something must be done for these mothers.

Not Too Expensive.

It must not be made too expensive to bring up a baby. That is bad for the race. A mother and father, with good milk, good air, and good water, and enough sense to use them, can do it. We do not need

The Sterilised Baby.

Miss Betty Tanner, the five year old Californian heiress to £5,000,000, is known as the "sterilised baby," on account of the extraordinary precautions taken to ensure that her health should not be endangered. A mansion has literally been built around her, near Los Angeles, a city of perpetual summer. The ground has been sterilised, and the same precaution has been taken with regard to every bit of material used in the building. The air that the baby breathes, her toys, food, and clothes are thoroughly antisepticised before they are allowed to reach her.

The Canadian Baby.

What we want is the ordinary Canadian baby. We have the fathers and mothers and we must see that they can get good milk, good air, and good water.

Poverty Kills the Baby.

The destruction of the poor is their poverty. The rich baby lives—the poor baby dies. Certified milk costs eighteen cents a quart to-day in Toronto. We cannot give everybody certified milk, but we *must* see that the poor man's milk is good enough to keep his baby alive. What is the use of milk legislation or Medical Health Officers, if they cannot do that?

The Edwardian Era.

Real efforts are being made in England now to prevent Infant Mortality, and with equally real success. Everybody helps now. This is one of the great movements of the Edwardian era—the movement to prevent Infant Mortality. When the 19th century and the great reign of Victoria ended, nobody but statisticians and sanitarians or other theorists talked much about Infant Mortality, and the Infant Mortality rate in 1901 was 154 per thousand in England. In 1909 it was 109 per thousand. That is something.

Do Something for the Mother.

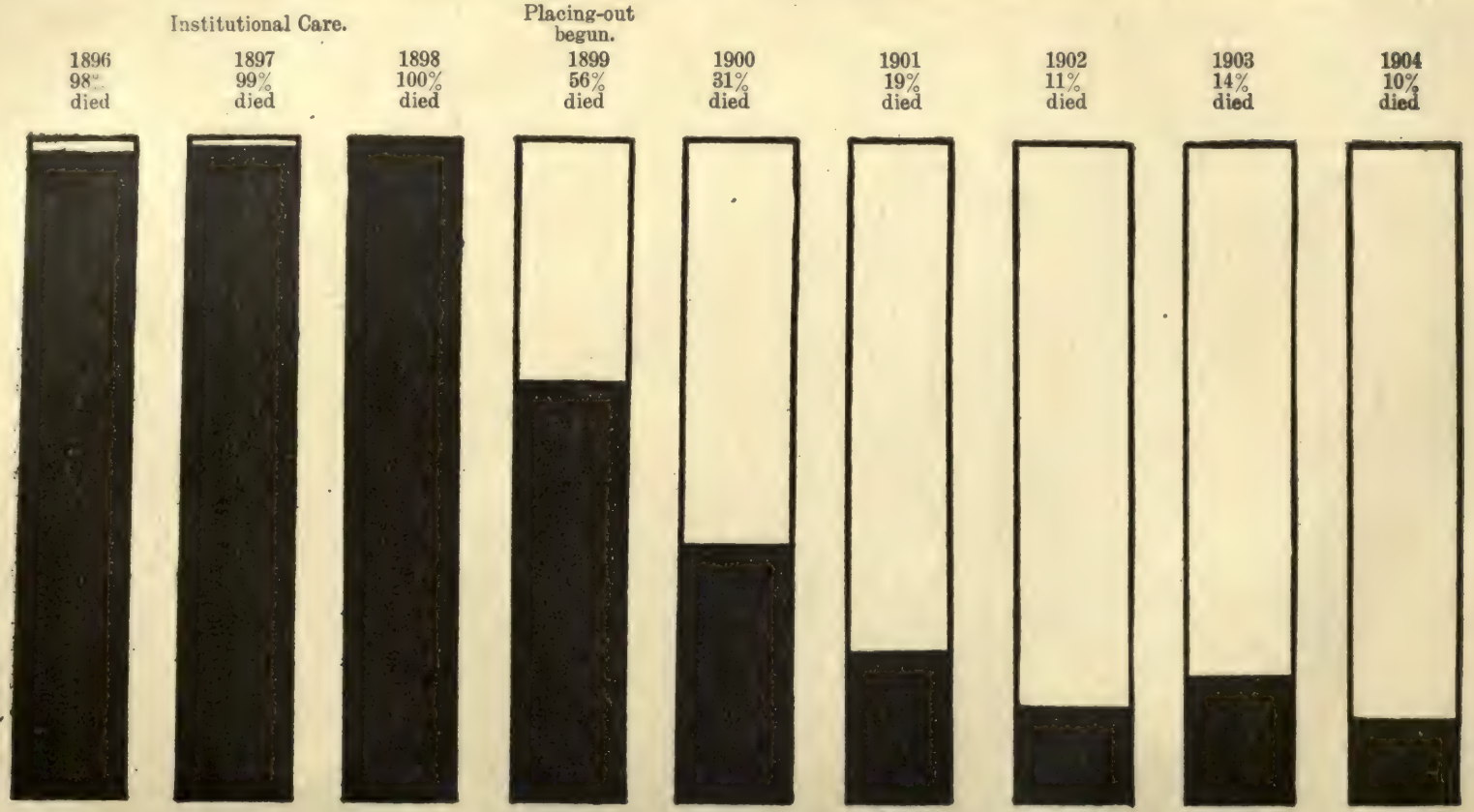
It is the mother that we should do something for. She is the one, and the only one, who can save the baby. If the "own mother" is dead or gone, then adopt a mother for the baby. Australia does it. Why not Ontario? It is the mother that the Government should "get behind." The Russell Sage Foundation, Department of Child Helping, publishes the following diagram, which needs no comment. The Institution is no place for the baby.

The same thing is shown by the following extract from an article appearing in the Journal of the American Medical Association, October 22nd, 1910, by Henry Dwight Chapin, M.D.

The Work of the Speedwell Society.

The hygienic surroundings have a most important effect on the nutrition of the feeble infant. If the environment is faulty the best care and feeding will usually prove ineffectual. These patients require an altered environment that will furnish plenty of fresh air, good general hygiene and individual care. For this reason they never do well in institutions, no matter how carefully and scientifically they are there fed. They cannot assimilate the best of food without plenty of good air to assist in its oxidation; oxygen is as necessary a food for them as protein or fat. It is only individual housing and care with constant oversight that can accomplish good results. Even an ignorant but kindly woman in a home can often get better results than a trained nurse in a hospital with a series of cases to look after and a stated routine to enforce. This is especially true in charitable work, where relief of feeble infants can be much better accomplished along the lines of family life with individual supervision instead of the collective life with institutional methods.

ONE SOCIETY REDUCED INFANT MORTALITY FROM 100% TO 10% BY PLACING-OUT BABIES IN FAMILY HOMES.



RUSSELL SAGE FOUNDATION.
DEPARTMENT OF CHILD-HELPING
105 East 22nd Street, New York.

Acting on this idea, the Speedwell Society was started at Morristown, N. J., in 1902, and I have ever since boarded out my atrophic infants there under the supervision of a doctor and trained nurse, who watch and treat the cases under the care of the various foster-mothers. The results have been better than with any other method of treating this class of cases. Thus, among 121 infants under 3 months, 45 died; 95, from 3 to 6 months, had 29 deaths; 83, from 6 to 12 months, had 21 deaths, and 85 infants, from 1 to 2 years, had only 8 deaths. These infants were all poorly nourished at the start, from bad hygienic surroundings, with various degrees of digestive disturbance from faulty feeding on the bottle, and stationary or losing weight. Although all had to be kept on bottle-feeding, a good proportion were not only saved but were restored to fair and even vigorous vitality. Under the old institutional methods nearly all would have died.

The Housing Question.

The mother is the only one who can save the baby. But what should the sanitary and municipal authorities do for the mother.

One great thing we can do for the mother is to find her a decent house, a clean street and a clean back yard. The mother is always fighting against dirt. Dust and dirt and flies—these are the things that the good housekeeper wages war against. Time was when the aristocracy and the middle classes lived in houses where now they would not keep their dogs. The ancient Scottish noblemen lived in houses in the High Street of Edinburgh where drains, scavenging, water, and other of the necessities and decencies of life truly were unknown. These were the days when death rates were enormous—when in 1761, 50 per cent. of the population of England died before the age of 20 years, and from 1751 to 1760 only 312 children out of 1,000 born survived to the age of ten years, while in Russia at the beginning of the 19th century only one-third of the children of the Russian peasantry lived to grow up. (Mangold).

Sanitary methods have brought down the general death rate in London to about 12 per 1,000, and the general infant death rate to about 109 per 1,000 babies born.

But the places where the big Infant Mortality occurs are parts of certain cities where there are houses which are like the houses in which the Edinburgh aristocracy lived in the 17th and 18th centuries. *And therefore Infant Mortality is great.* In the City of Toronto for example.

One Water-Tap to Ten Houses.

There you shall see ten mean houses in a row, with one water-tap out on the street, which is their one source of water supply. How can the mother keep things clean? There you shall see whole districts where that abomination, miscalled a sanitary convenience, recalls to one the unmentionable filth of the seventeenth century.

The Filthy House.

There you shall see back to back houses—houses unfit for human habitation—houses unfit for a dog-kennel—houses that Hercules himself, who cleansed the Augean stables, would refuse to take the contract to clean. And we expect the poor women bearing the burden of motherhood to do it! That house was probably old and filthy when she came to it. The lack of any convenience, sanitary or otherwise, no bath—no sink even sometimes, an unpaved street or lane outside,

and a good deal of dirt constantly coming into the house in various ways—the sum total of these things is too much, and it is harder on the mother than the father, because she is in the house nearly all the time and has but little recreation or amusement, while the tendency to deterioration of character and conduct in such a house is great.

No wonder that Dr. Hastings, Medical Health Officer of Toronto, is now getting information as to the housing problem in Toronto. But the City still sleeps on, though it shows some signs of waking soon. It cannot wake too soon, for there were born in Toronto in 1908, 7,618 children. And 1,215 children—or 159 in 1,000, died before they were one year old.

Still births are not included at all in the above figures, according to the International classification, now generally adopted.

Is Not a Man Better Than a Sheep.

As the Medical Officer of Northumberland says, referring to the Infant Mortality of Northumberland:—If such a mortality were to take place among lambs, a Royal Commission would be appointed and measures would be adopted for preventing such an unnatural mortality. Lambs, however, are frequently worth 50s. each when six months old; apparently babies are not.

Yet Dr. Farr, in 1876, estimated the mean net economic value of each male member of the population at £150, his estimate being based upon the low standard of the agricultural labourer of that period. He concluded that if this estimate were extended to the whole population, including females, the standard might be lowered to £110 a head. At the age of twenty-five years the net value of a man (i.e., the present value represented by the excess of his future earnings over cost of maintenance) was estimated by him at £246. Recently Professor Irving Fisher, of Yale University, has estimated the minimum worth of the average American life as 4,000 dollars at the age of twenty years.

Report by Dr. Newsholme to the Local Government Board.

By far the most important publication during the year on this subject has been that on Infant and Child Mortality, prepared by Dr. Newsholme, Chief Medical Officer to the Local Government Board, and presented to both Houses of Parliament by command of His Majesty. Dr. Newsholme's main theme is that the great loss and wastage of infant life suffered by us is due to circumstances which are within our control. It is our own fault—and it is our business to face it.

The Times in a leader on this Report aims fearlessly and straight at the mark when it speaks thus of

Dirt and Death and The Muzzled M. O. H.

"Nearly every county which has an excessive child mortality contains towns or districts which, within the last few years, have been visited by inspectors of the Local Government Board in consequence of epidemics or continuing prevalence of disease; and the reports of these inspectors tell the same tale of dirt and of neglect, with but little individual variation. From time to time we have given summaries of them; but they usually appear to run off the authorities concerned like water off a duck's back; and it is not uncommon for the evils described ten years ago to be again described as existing in equal intensity to-day. As a rule, it is found

Photo by Mr. Burnett, of Victoria College.

Where He Lives. An Unpaved Yard in Toronto. Three very dirty houses, with leaking roofs.

Rear view of a two-roomed dwelling over a store. This stair is the only means of access. —Burnett.

West end of Toronto. Row of ten houses, with one water tap at the end for the sole water supply. —Burnett.
Rent for these houses, $8.00 per month each. Total rent, $960.00 per year.

East end of Toronto. Sole "sanitary convenience" for at least four houses. —Burnett.

—Burnett.

Central part of Toronto. Archway through which access is had to the houses in the following picture.

—Burnett.

Parts of four houses in a group of six. Total number of inmates in the six houses, 50 persons. Open door of stable to left. Two "sanitary conveniences" for the whole six houses and 50 persons.

Narrow lane on which fronts a row of houses, right hand of photograph. —Burnett.

Two families (14 persons) live in cottage on left of photograph. —Burnett.

Muddy and dirty yard. Man and wife and seven children live in the south house. —Burnett.

One tap on the corner is the sole water supply for this row of houses, and for another row at right angles to it. —Burnett.
This tap is also the water supply for another house nearly quarter-mile away. East end of Toronto.

that the medical officer of health is a busy local practitioner, receiving a small salary which his employers regard chiefly as a sop to keep him quiet, or that he is naturally unwilling to incur the risk of offending his patients by calling attention to their misdoings. The members of the local council are often the owners of the cottage property which they ought to condemn, or are large contributors to the rates which would be temporarily increased by improvements. In many cases they have sought and obtained election to their offices simply as a means of saving the district from what they would describe as 'expense.'

"It seems manifest that the infliction of such loss upon the community generally, as a result of the ignorance, the parsimony, or the deliberate neglect of duty, of a few parochial office-holders should no longer be permitted by the legislature. It should not be difficult to enact that systematic neglect of their duties by urban or district councils should entail a transference of those duties, and of responsibility for their performance, to county councils or other selected bodies; and, now that the Chief Medical Officer of the Local Government Board has shown the intimate connection between infantile mortality and general sanitation, it is not too much to hope that the President of the Board may be able to convince his colleagues of the urgent necessity for Parliamentary action. The bitter cry of the perishing children should not be suffered to remain unheard; and Mr. Burns would certainly be supported by public opinion in an endeavor to improve the conditions which Dr. Newsholme has described."

In other words, it is we and our representatives who must save the lives of the children, by "efficient domestic and municipal sanitation and good housing." This gives the mother a chance to save the baby.

Infant Mortality in 1867.

In 1867 Ruskin wrote that one of the crowning and most accursed sins of the society of that day was the brutality with which it suffered the neglect of children.

In 1867 Infant Mortality varied from 150 to 250 per 1,000, but in 1909 it was reduced to 109 per 1,000. In this fact is the earnest of victory. What has been carried so far can be carried further.

Is It The Survival of The Fittest? No.

Dr. Newsholme enquires into three separate questions:

First, whether or not a high infant mortality is only a weeding out of the unfit, and the survival of the fittest.

This fallacy has been ended for ever by the painstaking and scientific investigations of Dr. Newsholme and his Department. The following table (taken from Dr. Newsholme's 39th Annual Report) shows it. Where the infant mortality is lowered; the death rate at all ages is lowered. Where the infant mortality goes up, up goes also the general death rate. Excessive mortality in infancy means excessive mortality in later life.

"The conclusion from this diagram is evident. As each sanitary authority and the inhabitants of its district succeed in removing the conditions favouring high infant mortality, they are removing the conditions producing a high rate of mortality in youth and throughout adult life."

	Mean Population, 1891-1900.	Mean Infant Mortality per 1,000 Births.
England and Wales.....	30,643,479	157
Selected Healthy Districts	4,477,485	109

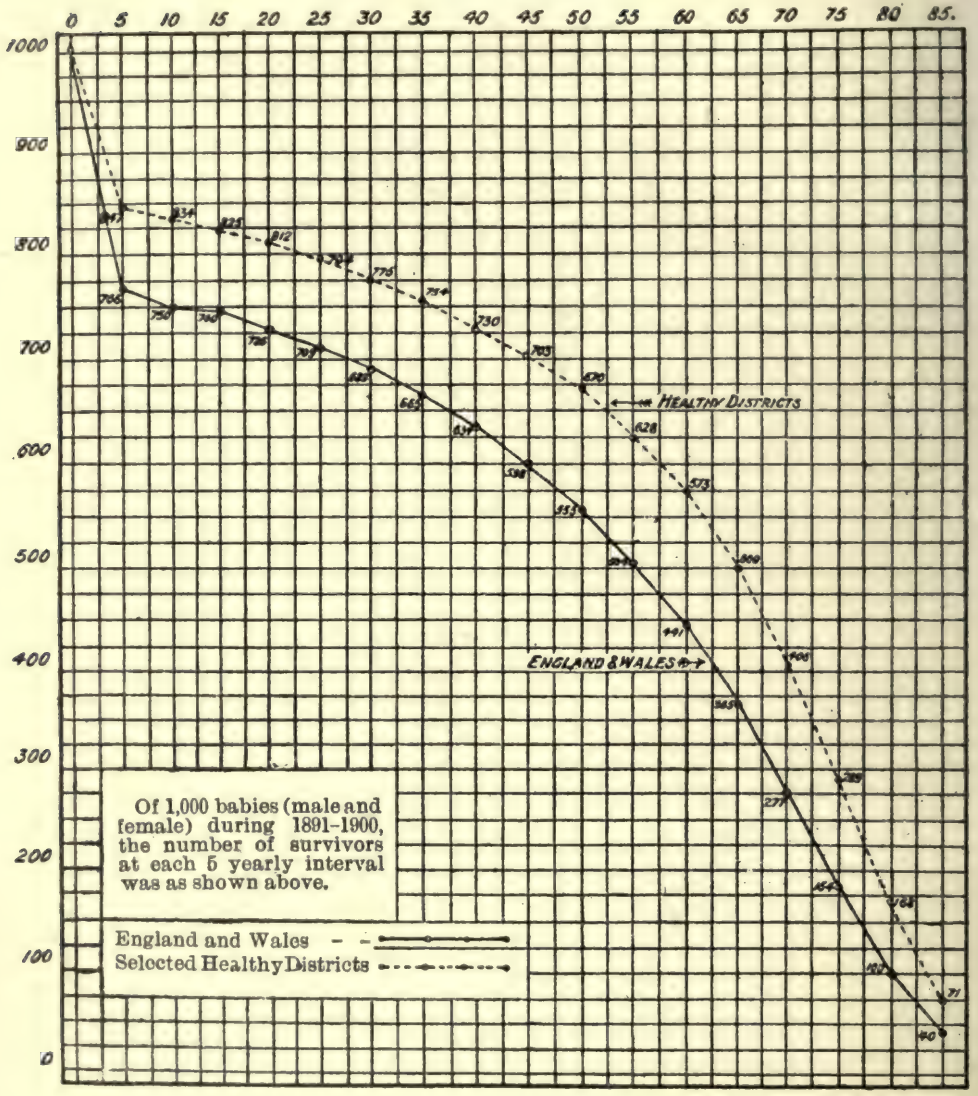


FIG. 1.

This table is to be read as shown in the following examples:—At age 20 the number of survivors was 812 in healthy districts, 726 in the country as a whole; at age 60 was 573 in healthy districts, 441 in the country as a whole · and so on.

Where Does the Baby Die?

Dr. Newsholme attacks secondly the question as to *where* the babies die, and proves by overwhelming statistical evidence that they die in the crowded centres of population. So many people to the acre—so many babies die. But this condition may be overcome, *if the sanitation is good.* In the whole of London that rate in 1908 was 113 per 1,000 births, but in the least overcrowded districts it was only 91 per 1,000, while in the most overcrowded it was 132 per 1,000. Taking individual boroughs, the lowest rate was in Hampstead (69), and the highest in Bermondsey (144). Sir Shirley Murphy very truly says: "The difference between the rates of infantile mortality in districts well and badly circumstanced socially is sufficient indication of the results which might be obtained if the infants of the less-favoured districts had extended to them the same care as that bestowed upon infants of the better favoured districts."

What is the Great Cause?

The third question is: What is the greatest cause of infant mortality? In short, What kills the baby? Dr. Newsholme's answer is in these words: "Infant mortality, is highest where, under urban conditions of life, filthy privies are permitted, where scavenging is neglected, and where the streets and yards are to a large extent not "made up" or paved.

The local sanitary authorities are largely responsible for the continuance of excessive infant mortality, and until they fulfil satisfactorily their elementary tasks, efforts in the direction of domestic hygiene can only be partially successful. Diarrhoea is most prevalent where municipal sanitation is bad. It cannot be entirely removed unless infants' food is prepared under cleanly conditions. Sanitary authorities, in the words of Sir John Simon, the first Medical Officer of the Local Government Board, are the "appointed guardians of masses of human beings whose lives are at stake in the business."

How to Reduce Infant Mortality.

Finally, Dr. Newsholme states clearly how to reduce Infant Mortality. In addition to what has been already stated he recommends:

(1). More detailed investigation of all deaths occurring in infancy as a guide to administrative action.

(2). Inquiries into the circumstances attending still births.

(3). The adequate training of midwives.

(4). The efficient administration of the Midwives Act.

(5). The adoption of the notification of Births Act.

(6). And the making of arrangements for the giving of instruction in infant hygiene.

He reserves for a further report detailed reference to the admirable work done in Municipal Milk Depots, Schools for Mothers, Infant Consultations, etc., and concludes by giving a "Black List" of eight counties where the sanitary authorities "are most urgently called upon to perform more completely their primary duties." And then says:

Expensive, but Economical.

"The measures indicated above furnish an incomplete remedy in the counties in which insanitary conditions are rife. Sanitary authorities in compactly populated districts should decide to remove all dry closets if a water-carriage system is practicable, to introduce and maintain efficient scavenging, and to provide for the satisfactory paving of streets and yards when required. Doubtless these measures will be expensive; but they are much more economical than the sickness and impaired efficiency of the population which are their alternative; and no sanitary authority can justify neglect in undertaking these elementary tasks."

Mother-Craft.

In connection with the recommendation of Dr. Newsholme, that arrangements should be made for the teaching of infant hygiene, it is highly satisfactory to note that another Department of the British Government, the Board of Education, has made a departure in this direction. Dr. Janet M. Campbell, one of the assistants of Sir George Newman, the Chief Medical Officer of the Board, has prepared an admirable monograph on "The Teaching of Infant Care and Management in Public Elementary Schools." Dr. Campbell had already "made good" on the staff of the London County Council Education Committee, under Dr. James Kerr, and this Memorandum will add to her reputation. As *The Medical Officer* aptly remarks, the bitter jest of Mr. Herbert Spencer will now lose its reproachful sting, if his fabulous antiquary should come across Dr. Campbell's monograph:—

A School for Celibates.

"More than half a century ago Mr. Herbert Spencer said, that if by some strange chance not a vestige of us descended to the remote future, save a pile of our school books or some college examination papers, we might imagine how puzzled an antiquary of the period would be on finding in them no indication that the learners were ever likely to be parents. 'This must have been the curiculum for their celibates,' he would say. 'I perceive here an elaborate preparation for many things, but I find no reference to the bringing up of children. They could not have been so absurd as to omit all training for this gravest of responsibilities. Evidently, then, this was the school course of one of their monastic orders.' It is desirable that before girls actually leave the elementary schools they should have an opportunity of learning the right way of conducting the household which one day they may hope to control.

"In a prefatory note to the Memorandum, *Sir Robert Morant states that the Board of Education is anxious to direct the attention of members of local education authorities, of managers, and of teachers of public elementary schools throughout England and Wales, to the great importance of increasing and improving the present inadequate provision in our schools for instructing girls in the care and management of infants. He further very properly insists that the suggested training should be of a two-fold nature, namely, a training in domesticity and a training in infant care, and that it should be designed not to replace, but to stimulate and encourage teaching by the mother in the home.

*Board of Education Memorandum on the Teaching of Infant Care and Management in Public Elementary Schools, 1910. Circular 758. Price 2d. (London: Eyre & Spottiswoode, Ltd.)

"Dr. Campbell, points out at the outset that the care and right management of infancy lies at the foundation of two somewhat kindred problems: the problem of infant mortality and its prevention and the still wider question of the physical health of the child. After giving a short account of what is already being done in some parts of the country as regards the necessary instruction, the main lines which should be followed in carrying out such a course are indicated. The girls should be placed in two groups, one being of those between 7 and 12 years and the other of those between 12 and 14 years. The lessons, which should be practical in their application, should also be of the simplest character. They should be directed towards developing and forming the 'health conscience' of the children and towards arousing the desire and ambition to put the principles embodied in the lessons into practice in their own homes.

"The subjects suggested for the younger group of girls include personal hygiene, fresh air and ventilation, warmth, cleanliness, eating and drinking, clothing and sleep. For the elder girls the teaching should be, in the main, a direct continuation of that already given, extending the character and degree of the illustrations, and leading the girl gradually on to more advanced matters, particularly concerning infant management. They should also receive lessons in housekeeping, in home nursing, and on temperance. Dr. Campbell considers that as a rule the teaching is better entrusted to a member of the regular school staff rather than to a special visiting teacher. The former has the advantage of knowing the girls well and of meeting them constantly, while in many cases she may know the parents and the home circumstances and may be able to exert a considerable influence on the mothers."

THE AMERICAN ASSOCIATION FOR THE STUDY AND PREVENTION OF INFANT MORTALITY.

The Association held its first Annual Meeting at the Johns Hopkins University, on November 9th, 10th and 11th. The Exhibition, for example, touched almost every aspect of the subject. In one corner were seen model baby clothes (from Montreal). In another, there was a model milk exhibit. In a third, a room of a house in the slums of New York, before and after the advent of the visiting nurse. Charts from Washington, diagrams relating to the deaths of infants, a red electric flash-light coming out every six seconds to show how often a baby dies in the civilized world, and a large photograph, surrounded by electric lights, showing a mother nursing her baby with the question under it—"This baby is getting a square deal, is yours?"—went to make up the grand total of a remarkable exhibition.

What Becomes of 100 Babies Born in Baltimore.

Another clever device for making people think, was an exhibit in three sections representing the 1st, 2nd, and 3rd years of life.

In the 1st section were 100 tiny naked celluloid dolls, in the 2nd, 87 dolls and 13 tiny graves. (If it had been Toronto, there would have been 16 graves). The graves were marked—Diarrhoea, Diphtheria, "Bottlefeeding," "Tuberculosis." The 3rd section showed 82 dolls and 5 graves.

Seventeen organizations and a magnificent working committee made the exhibition.

Some of the Addresses—Registration.

The infant population of the United States is now given at 1,500,000. The number of babies who die every year is 300,000—equal to the population of a large city. The total number of deaths from tuberculosis per annum is 160,000—equal to the population of a small city. But our American friends with their wonted energy and progressiveness are now waking everybody up over this question. On the question of registration, an important Report by the chief American Expert on Vital Statistics was presented, and certainly was characterized by plain speaking:

"Talk about the registration of births in the United States! Why, for not more than one-half (55.3 per cent.) of the total population of the United States is there even fairly accurate registration of deaths alone. Many States—practically the entire south—make no more records of the deaths of their citizens than if they were cattle; not even so much, for blooded cattle have their vital events recorded, while human beings are thrown into their graves without a trace of legal registration. And even the States that have fairly good registration of deaths, and that have had such registration for many years, grossly neglect the equally important, or even more important, registration of births. * * * Our native born children of native parents are as worthy of protection as the children of any other country, and the children born to foreign parents in this country should have the same safeguards about their cradles as if they had been born in a foreign land. America should not mean barbarity in its relation to infant life. The aegis of protective civilization should rest upon the infant of American birth, and a proper record be made of the vital events of his life for his personal protection, legal use and for the most important sanitary information which can alone be obtained from such records." From Dr. Cressy L. Wilbur, in Report of the Committee on Birth Registration.

Ask for the Birth Certificate.

One good way to secure birth registration would be to insist on a child going to school for the first time, or going to work anywhere, showing his or her birth registration certificate. Another good plan was used by Dr. Lederle, Health Commissioner of New York, who introduced a simple device for forcing doctors to record births. Whenever a child's death certificate was filed, the birth records were searched for its birth certificate. If the child's birth had not been received, the family was questioned as to the doctor or midwife, and a warning sent to the offender that the next failure to record a birth would be followed by publicity and prosecution. Immediately the (apparent) birth-rate rose—not because more children were born, but because a simple workable device was installed for compelling registration.

The Duty of the Municipality.

Dr. Neff, of Philadelphia, described the Duty of the Municipality in Preventing Infant Mortality, and gave an account of what was done in Philadelphia in the summer of 1910, when, though the general infant mortality for Philadelphia showed an increase of 44.4 per cent. over the rate in the summer of 1909, yet the district covered by the nurses showed an increase of only 4.4 per cent.

Organizations.

"In the movement, which it is hoped will lead to a permanent Division of Child Hygiene, there were enlisted 20 day nurseries, 22 settlements and neighborhood betterment agencies, having facilities such as baths, camps, mothers' clubs,

milk stations, etc., eight agencies providing temporary shelter for mothers and children, 10 modified milk stations, 55 hospitals and dispensaries, 30 associations providing convalescent care or outings, 21 agencies visiting and enquiring into the needs of mothers and children in their homes, and the city, through its Bureau of Police and Property, Board of Public Education, and the Department of Public Health and Charities, represented by the Divisions of Medical Inspection, Nuisance Inspection, House Drainage Inspection, Milk Inspection, Meat and Cattle Inspection, Tenement House Inspection, School Nurses, Visiting Nurses, Children's Agent in Charge of Dependent Children, and Special Agents for Advice and Information.

Other Helps.

Education of the mother was continued in the home by personal instructions and demonstrations by the nurses; milk stations were made educational centres; medical clinics were established. Exhibits on the "Care of the Baby" were most effective features. They were placed in milk stations, schools, city piers, and other institutions, and consisted of graphic charts and display cards, photographs, sketches, and models, which depicted the proper hygiene and care of the infant. Classes of mothers were held once a week in several sections of the city and prizes were given for those babies showing the best results. Two large city piers were altered and furnished by the city as open-air hospitals, with modified milk stations, physicians and municipal nurses in attendance, and accommodations for mothers and older children. On the piers lectures were given to the caretakers in the preparation of food, washing, and care of the baby."

Audiences at the Meetings.

The audiences were large and enthusiastic, and the general effect of the meeting will probably be far-reaching. The leading professors of the Medical Faculty of Johns Hopkins University were present and contributed greatly to the success of the meeting, especially the President, Dr. J. H. Mason Knox, Dr. William H. Welch, and Dr. Llewellys Barker. His Eminence Cardinal Gibbons and His Excellency Monsieur Jusserand, the French Ambassador, were present, and there was a large attendance, not only from Baltimore, but from New York, Boston, Chicago, and most of the other large American cities. Southern hospitality and the interest of a common purpose, added greatly to the pleasure and profit of the guests.

INFANT MORTALITY IN OTHER COUNTRIES.

China.

For purposes of comparison it may be mentioned that in Hong Kong, where there is birth registration, the infant mortality rate in 1909 was 873 per 1,000 among the Chinese. (British Medical Journal, October 29th, 1910, p. 1,316.)

Germany.

Figures lately published by the Imperial Statistical Office show that the rate of infantile mortality throughout Germany increased slightly last year both in town and country, but the rate in the towns was once more lower than that in the country. The figures for children born in wedlock were:

Deaths under one year per 1,000 born alive.

	1907.	1908.
Town	154	157
Country	162	166

Children born out of wedlock.

	1907.	1908.
Town	281	291
Country	295	307

The averages (children born in wedlock) for the years 1886 to 1890 were: Town, 210; country, 187; for the years 1896 to 1900, 195 and 185; 1901 to 1906, 181 and 178. For the first time in 1907 the percentage of mortality in the towns was less than that in the country. The official note referring to these figures expresses the belief that the greater decrease in mortality in the towns is due to the greater proportionate decrease in human fertility. It is believed that in proportion as the number of children per family in the towns tends to become less, so the value attached to infant life grows greater, and people are more careful of the health of young children.

SPECIAL ENQUIRIES—ABERDEEN.

Among the special enquiries made during the year into infant mortality, one which stands out prominently is that of Dr. Matthew Hay, of Aberdeen. The enquiry covers many points already touched upon, but it concludes with the following practical suggestion worth noting by those who work where infant mortality is at its worst, namely, in the poor districts:

Cheap at Seven Pounds.

"Would it be too much for the Council—if even for only one year—by way of experiment, to vote a sum of, say, £150, to be placed at the disposal of their health visitors for presenting to mothers among the working classes, who are, *for satisfactory reasons,* obliged to bottle-feed in place of breast-feed their babies, a supply of tubeless bottles and a suitable household milk sterilizer? The number of bottle-fed babies of all classes last year was 1,334. Even if so many as 1,000 mothers accepted the proposed gift, the cost would be covered by the suggested grant.

If only twenty lives could be saved, they would be exceedingly cheap at £7 to £8 each. But the saving might be much larger."

Ireland.

A Conference on Infant Mortality was held in September in Dublin under the auspices of the Women's National Health Association of Ireland. Lady Aberdeen presided, and said that though the infantile death rate in Ireland was considerably lower than in England or Scotland, yet in the towns the death rate was high. In England the average infantile death rate was 126 per 1,000, in Scotland 116, and in Ireland 92, but it was considerably higher in the larger cities, being 141 per 1,000 in the first year of life in Dublin, in Belfast 139, and in Cork 126.

Children Without a Name.

The corporate conscience is always below the standard of the personal conscience, and in a Christian community, such as ours, the child born under the overwhelming misfortune that its birth is the proof of its parents' sin has even less chance of life than the slum baby.

The Nameless Baby Dies.

Taking the average for England and Wales, the death rate among illegitimate children is twice that of children born in wedlock, as Dr. Newsholme says:

In 1909 the special death rate among illegitimate children in the City of Norwich was 205 per 1,000 births, whereas the special death rate among the legitimates was only 108. In other words, the chances of surviving one year, for the illegitimate infants, are only about half as good as those of their legitimate compeers. Commenting on these figures, Dr. H. C. Pattin, M. O. H., writes: "There is unquestionably a deplorable, and one cannot help thinking a largely preventable, leakage of life here; a leakage that would be even more pronounced were it not for the efforts made by the health visitors and by some voluntary workers who make the oversight and care of illegitimate infants their special form of social service. Against what adverse influences they have to contend the figures sufficiently attest.

It is significant that under three months of age the prospect of death is 108 per cent. greater, at ages three to six months is 72 per cent. greater among illegitimate than among legitimate infants.

Is it Christian?

Is the attitude of society to the illegitimate child a right one? Is it a Christian attitude?

Is it Successful?

One thing is certain. This attitude has not been a successful attitude. It has not helped us any. It has not ended the evil. The evil is a present one. And it kills the baby. The general infant mortality rate is bad. But the infant mortality rate among those whom society brands as "nobody's children" is worse—twice as bad as the former.

In Ontario the number of illegitimate births in 1908 was 819, but there is no separate record of the number of deaths under one year of age. Special attention given to the number of deaths, causes of death, and other particulars would help to reduce our abnormal and disgraceful infant mortality.

The Baby Farmer.

The baby farmer is not by any means unknown in Ontario. There were certain of them so well known to the police that legislation at last reached some of them. But the terrible plan of giving $50 to a woman or an institution, on condition that the giver is to be relieved of all responsibility for some innocent baby is a wicked thing. The woman who is willing to take another woman's baby that has no claim upon her, except the claim which every helpless child has upon each one of us who were all once babies ourselves, is either a great philanthropist, willing to burden herself with the incessant care, charge, labour, loss of comfort, and anxiety

that an infant involves, as well as the cost of its maintenance up to the age of fourteen years; or else she is in desperate need of the $50. And the $50 will be gone and the remaining responsibility irksome long before the poor child stands on its feet for the first time. Advising the young mother, the only hope most nameless babies have, to disown her child, and harden her heart against it, is not going to help the mother, the child, the Church, or the nation.

Is There no Better Way?

The common attitude of society on this question has a suspicious resemblance to the attitude of the Pharisees in the time of our Lord. It was not approved of by Him. One great argument of such persons is that if we do anything for the babies, it will make it easier for people to sin this particular sin, and so be bad for society. Is that right?

The Empress Catherine II. of Russia seems to have been the one who first refused to hold these poor children responsible for the sins of their parents, and built foundling hospitals for them. Paul Neander of Moscow says that she ordered that there should always be a basket with warm wraps, ready day and night, to receive foundlings, and that the guards should not show themselves and never ask the least question of those who placed the babies in the basket, which was drawn inside through an opening in the door.

The Friendless Immigrant Girl.

Any one who works in hospital maternity wards cannot fail to observe what a number of immigrant girls, in large cities at least, find their sad way there. They are exposed to peculiar temptations. Few realize what a protection to a girl is the mere knowledge on the part of those likely to tempt her, of the fact that she has a home or that her mother is living, or even that she has a brother in Canada. It is the lonely girl that is in the most danger. And the men whom they meet laugh at their Old Country ideas, pretending (we hope untruly) that things are different here and all women are—etc., etc., etc. Prevention is better than cure. Safeguard the friendless immigrant girl. Hostels and respectable homes or Government homes for immigrant girls are much needed, and prevent a great deal of harm and trouble.

Hospital Social Service Departments.

Social Service Departments in Hospitals deal with this dark problem. The Social Service Department is formed primarily of one or more doctors and nurses, with or without volunteer "Social Workers," who make it their business to get hold of the cause and root of the sickness, whether that be drinking, recklessness, starvation, overeating, heartache, or, as in the Maternity Department sometimes, some form or manifestation of the so-called "social evil."

This movement began under Dr. Cabot in the Massachusetts General Hospital, Boston, and there one of the nurses, Mrs. Jessie D. Hodder, has special charge of

The Girls Who Go Wrong.

The following passage, taken from an address given by her at Clark University, gives some idea of the principles which are sought to be carried out in Social Service of this kind:

"Every situation of this kind is a difficult one to solve because we lose our calm. I do not agree with you that the girl cannot keep her baby. Think of the widows you know who are bringing up their children, who have no education, nothing but their hands to earn with, and untrained hands, at that. Having a baby is not like having a boil or a pimple. A poultice or time would dispose of either of the latter and leave the patient as she was. Disposing of a baby does not leave either its mother or father where they were before—and what of the baby? Go look at the wards of the State; see those at the Reform Schools, the women in the prisons, the boys in the Reform Schools and prisons, and see how many of them do not know who their parents were; they are children who have not asked to come into this world, and many of them have been shuffled off by selfish parents.

"This mother can take care of her baby, I feel perfectly sure; and she will be a bigger, braver woman if she does, as you realize. I can imagine no more horrible fate than to feel that my baby—my own flesh and blood—was somewhere around in the world, I knew not where. Take this girl's life so far, add this experience (I mean the sex experience), then add the experience of carrying and giving birth to her baby plus the care she will have had of it so far, then subtract the baby—put it selfishly, brutally, out of her life—and what is there left? You see, we stop being twenty, and we come to be forty, and we care a lot if our feelings are worth having. Life ceases to mean existence and comes to mean soul and all that goes to make it richer, more worth while. You and I, and every one who is helping the girl in this sorrow, must not lose sight of this and the years to come. Can there be anything more awful than to wake up and realize that one has thrown away an opportunity? Surely that is what would happen if that baby is given away. I have seen too many girls find in their baby all they have hungered for to be willing to fall in with the plans of a woman who, through fear and shame, shrank from her baby and the disgrace it would bring upon her.

"How about the chance to develop the man morally? What bigger debt has he contracted in this world than his debt to his own child? Why cannot he deny himself and spend $10 a month towards its support? Why cannot he take out a savings bank insurance policy for $1,000 for the child, payable at its twentieth birthday? Its mother might take out one for $500. In the meantime both contribute towards its support and schooling. You or some one equally interested might be appointed guardian for the child and see that when it grew up it learned a trade or went to college; its father did, you say. Say that to him. Make him feel that his baby, illegitimately born, is just as human a being, just as sensitive, just as ambitious, as a baby born in wedlock, or as he was when he struggled and worked his way through college.

"I cannot feel that the community has any growth so long as its members are shirkers. This I am not saying to you; I am saying it to all of us who turn and run from an illegitimate baby or any other evidence of our own self-indulgence or wrong-doing.

"If we do not hold the man up to the mark in these cases he is justified in feeling not only that it is not immoral for him to do such things (he sees how society treats the girl), but that, by some perversion or twist of the social order which does not apply to women, he has no obligation to his offspring. What is he on earth for then? To whom *does* he owe his obligations? To society? His child is society. To his neighbor? His child is his nearest neighbor. His child is both, and closer than both, and we must make him feel this until he aches. The girl must help us. Of course, she must not marry him if they do not love each other; but unless he shares the care of the child he will see no reason why he should not

seduce any or every girl his brutal selfishness leads him toward. Surely, thereby, his sense of citizenship, fatherhood, and the rest are weakened. For the sake of his moral welfare, for the sake of his child, for the sake of the next girl he may know, for the sake of the community in which he lives, and upon which they would throw the care of this child, he must be made to share the responsibility of the child's support and care."

WHAT NEW SOUTH WALES DOES FOR STATE CHILDREN.

This Department is indebted to Sir George Reid, High Commissioner for Australia, who, by request, procured for us the following information. The letter is from the Hon. Charles K. MacKellar, the President of the State Children's Relief Board, and it shows that New South Wales does not "turn and run" from this problem. State children is a better name than "Nobody's Children":

CHARITABLE INSTITUTIONS OF NEW SOUTH WALES.

OFFICES OF THE STATE CHILDREN RELIEF BOARD AND CHILDREN'S PROTECTION ACT, AND INFANT PROTECTION ACT.

RICHMOND TERRACE, DOMAIN,
SYDNEY, June 20th, 1910.

THE RIGHT HON. SIR G. H. REID, P.C., K.C., K.C.M.G.,
High Commissioner for Australia,
Commonwealth Offices,
72 Victoria Street, Westminster, S.W.

MY DEAR SIR GEORGE,—I duly received your enquiry, dated the 3rd May, as to what is done by the New South Wales Government in connection with the establishment of a home for the care of mothers of illegitimate children, and hasten to acquaint you with the steps that have been taken in that regard up to the present.

There are now three homes for the care of mothers and infants, and these vary slightly in nature, though established for a similar purpose. There is, first, a Home for Sick Infants, at Paddington, controlled by a private nurse with a staff of trained assistants, under regular medical supervision. This Home accommodates some twenty sickly infants, with five or six of their mothers, who, as far as possible, are expected to nurse the children themselves. The majority of the children admitted are of the type of sickly infants who have been placed out by their mothers in foster homes, and whose custodians have been unable or unwilling to nurse them properly, with the result that the little ones have fallen into ill-health. The mortality in this Home is naturally large, as the infants are taken in only when the custodian or mother has neglected to care for them properly—a neglect which frequently proves fatal, and which was expressed by a mortality rate of 90 per cent. when this same class of children were removed in an ailing condition from low-class foster homes for medical treatment in large institutions (that being the general practice prior to the opening of special homes for the purpose). Up to the present time, the mortality rate in this particular home has been 40 to 45 per cent. The infants admitted thereto are paid for by the State Children Relief Board at 10s. per week each.

Secondly, there is a Home for *Healthy* Infants with their mothers at Thirlmere. This Home accommodates some twenty infants and ten mothers. The class of children sent there are (*a*) healthy infants, and (*b*) those in a convalescent state from the former Home. This Home has a mortality rate of, approximately, 6 to 7 per cent; a trained nurse is in charge of the children, who have regular medical supervision. These, also, are paid for by the State Children Relief Board at 10s. per week each.

Both of these Homes were inaugurated by the State Children Relief Board, in pursuance of the general State policy of boarding-out. The nurses in charge are private guardians, and not Government officers, but the Homes are under the direct supervision of the Board just mentioned.

Thirdly, there is a Home for Infants, at Croydon, with accommodation for some fifteen babies with their mothers. This is the only institution, wholly supported by the Government, for the purpose of dealing with infants and their mothers. This Home is in charge of a Government matron and an assistant. It has only been in existence six months, and no deaths have occurred there.

The main object in connection with these Homes is to provide strict privacy for the inmates, apart from the contaminating influences which are inseparable from large institutions, and to which, in the absence of these special homes, the girls would be subject. So far as young children are concerned, too, the dangers of infectivity are reduced to a minimum when the children are treated individually in suitable establishments.

INFANT MORTALITY IN NEW SOUTH WALES.

So much for New South Wales and the Nameless Baby. But the general question of Infant Mortality is also carefully considered there. The Hon. Mr. MacKellar continues:

I am at present in communication with the Hon. C. G. Wade, Premier of the State, concerning the necessity for providing additional accommodation for sick infants in specially adapted premises, such as wooden pavilions or tents. Dr. Clubbe, President of the Royal Alexandra Hospital for Children, Camperdown, Sydney, is highly sympathetic with the proposal. It is likely that the Government will give effect to some such scheme in the near future, of which I shall have much pleasure in forwarding you particulars. The primary importance of Dr. Clubbe's proposal is that it makes a definite and systematic effort to provide more adequate treatment for infants suffering with gastro-enteritis, and other diseases of similar grave infectivity. When these premises are available, they will largely supersede the Homes for Sickly Infants.

Dr. Clubbe anticipates a decrease in the mortality rate of infants suffering from gastro-enteritis and similar infectious diseases, of at least 30 per cent. if his suggestion is adopted of treating the children in suitable tents or pavilions.

This is the detailed information of the nature you seek. I shall now furnish you with a few other particulars, which will probably be convenient for you to have.

Reference to the Government Statistician's pamphlet, entituled "Tuberculosis in New South Wales" (by Mr. John B. Trivett, F.R.A.S., F.S.S.), shows the extreme importance of the Dairy Supervision Act of 1886, which you will remember I had the honor to introduce into Parliament, as a factor in securing "a wholesome reduction in infantile mortality (tubercular diseases)." I shall

not overwhelm you with a mass of statistics, but shall quote the figures from that publication, showing that the deaths of children up to 4 years of age fell from 195 in 1886 to 44 in 1908, and between those years a gradual decrease was apparent. This, of course, only applies to children suffering from tubercular diseases. This is an obvious proof of the importance of having a pure milk supply for young infants.

The death rate in New South Wales (infantile) was 75.20 per thousand in 1908, as compared with 86.05 per thousand in Victoria during the same year. I attach a statement, showing the latest information as to birth rate, and the improvement manifested therein.

Appended is a record of the special action taken by the Medical Officer of Health for the Metropolitan Combined Sanitary Districts, Sydney. This practice is still in force. The methods adopted appear to be very similar to those followed at Huddersfield, mention of which was made in the Sydney *Daily Telegraph* of Tuesday, 7th June, instant. A summary of the procedure is forwarded herewith.

Additional measures to safeguard infant life in this State are: (1) The appointment of Lady Inspectors in connection with this Department, of whom there are three, to visit and inspect young infants up to the age of three years, placed out apart from their mothers. These Inspectors are Government officers. (2) Appointment of Lady Inspector, Department of Health, to visit and inspect infants, and impart instruction to nursing mothers, within the municipality of the city of Sydney. (3) *The compulsory attendance at Metropolitan Hospitals fortnightly of all foster-mothers with infants up to twelve months old, in order that the infants may be medically examined, and the foster-mothers instructed by the doctors,* who act in an honorary capacity. Children placed out within a radius of three miles of the city are taken to the established Children's Hospitals. Children in the North Sydney area are attended by a local practitioner, and the children at Goulburn are dealt with in a similar way. This system is being gradually extended, and will eventually include the whole State. The results achieved in this way are very valuable, enabling serious complaints to be checked at the outset, hereditary taints counteracted as far as possible, and foster-mothers, hitherto incompetent, made conversant with the main principles of hygiene, infantile feeding, and home nursing.

Any further information that you may require I shall be glad to let you have on application.

With kind regards, and the hope that I may hear from you at your leisure,

I am,

My dear Sir George,

Yours faithfully,

CHARLES K. MACKELLAR,

President State Children Relief Board.

OFFICE OF THE MEDICAL OFFICER OF HEALTH FOR THE METROPOLITAN COMBINED SANITARY DISTRICTS,

SYDNEY, 4th November, 1908.

SIR,—Early in the year 1904, I laid before the Local Authority for the City of Sydney a scheme which, it was hoped, would tend to the reduction of mortality from infantile diarrhœa in particular, and infantile mortality in general, through

the better instruction of nursing mothers. The principal feature of the scheme consisted in the employment of a trained woman inspector to visit the mothers of all children born in poor and thickly-populated neighborhoods in the city, and instruct mothers in the care and feeding of infants, and the proper treatment of children's food.

The scheme was adopted, and came into full operation in the middle of the year 1904. It has continued to operate ever since.

Full lists of all births registered within the city are obtained daily from the Registrars of births, together with the addresses of the premises on which births have occurred. As soon as possible after receipt of this information every house in a poor or thickly-populated district in which a birth has been registered is visited by the female inspector, and the nursing mother is interviewed and instructed verbally in the feeding and management of her child. Printed leaflets, giving simple instructions on the same subject, are handed to each mother visited.

The principal instructions impressed on the mothers in these visits are the importance of breast-feeding alone until the children have attained the age of about seven months, the superiority of cow's milk over any other artificial food, and the importance of the clean storage of infant's food, and its protection from flies and dirt.

A daily record of the names and addresses of all nursing mothers visited is kept, together with a record of certain other particulars obtained by the Inspector. Between the 1st July, 1904, and 31st December, 1907, 4,748 nursing mothers in the city were thus visited, or 53% of all births registered, or 67% of all births not in public institutions.

The average age of the children visited was as follows:

1904	5.3	weeks.
1905	5.4	„
1906	5.2	„
1907	5.3	„

The results of these operations have been very satisfactory, as will appear from the attached tables. The proportion of children entirely breast-fed began to increase immediately. In 1904, 72.2 per cent. of the children visited were found to be entirely breast-fed. In 1905, this proportion increased to 76.5 per cent. In 1906, it further increased to 78.8 per cent., and in 1907 it still further increased to 80.1 per cent. of all the children visited. No selection has been practised, except that the children visited have all resided in the poorer parts of the city. I attribute the above increase in the number of breast-fed children in the city of Sydney entirely to the operation of the means I have described. I do not know of any other influence which could have operated in this direction. Table 2 shows that a marked fall in the diarrhœal death-rate of the city of Sydney has taken place, and was coincident with the introduction of the system of visiting nursing mothers. The diarrhœal death-rate does not depend only on infantile deaths, since it is contributed to by deaths at all ages, but from 70% to 75% of all diarrhœal deaths are among children under one year of age.

Under the circumstances set forth, it appears to me that a strong *prima facie* case has been made out for extending the system of visiting nursing mothers to the suburbs of Sydney, or, at least, to the more populous and poorer class suburbs immediately surrounding the city. The Municipalities of Glebe, Newtown, Redfern, Darlington, Camperdown, Alexandria and Waterloo have a combined popula-

tion of about 100,000 persons, and are populated in the main by a class of persons who would benefit by the establishment of a system of imparting instruction in the care and feeding of children to nursing mothers. One woman could deal with these districts on the lines indicated.

I have the honour to request that you will consider the advisability of providing for the instruction of nursing mothers in those districts by increasing my inspecting staff by the addition thereto of a trained woman inspector or health visitor, whose services will be devoted to the visiting and instruction of nursing mothers.

I have, etc.,

(Sgd.) W. G. Armstrong,

Medical Officer of Health, Metropolitan Combined Districts.

TABLE 1.

Records of Nursing Mothers visited in the City of Sydney.

	1904	1905	1906	1907
Number visited	781	1,455	1,240	1,272
Breast feeding only	564 (72.2%)	1,114 (76.5%)	977 (78.8%)	1,019 (80.1%)
Partially breast-feeding	166 (21.3%)	250 (17.2%)	210 (17%)	202 (15.9%)
Not breast feeding	51 (6.5%)	91 (6.3%)	53 (4.2%)	51 (4%)

TABLE 2.

Death Rates at all ages from Diarrhoeal Diseases in the City of Sydney—per 1,000 living.

Year.	Death Rate.
1901	1.55
1902	1.86
1903	1.83
1904	.96
1905	.64
1906	.73
1907	.81

Australia *vs.* Canada.

Advance, Australia! An Infant Mortality of 75 per thousand is good. It is a splendid achievement. But why is it 125 per thousand in Ontario? They are working at it in New South Wales. We are not working at it in Ontario. We must get busy.

South Australia.

The other Australian States have the same general policy. In South Australia they do not use the word "orphan" in connection with the charitable institutions. There are no "orphan asylums." Children are looked after by a "Children's Council," which had in 1909-10 1,479 children under its care, 1,220 of whom were boarded out, seven in hospitals and thirty-two in institutions for defectives and delinquents. The total budget was about $100,000, of which fifteen per cent. was for central administration. The expenses for the children boarded out, including administrative expense, was twelve pounds a year, or about five dollars a month, each. Some of these children, working part time after they are

thirteen, earned and deposited in the Postal Savings Bank a total of $6,500. Applications for children, which are always greater in number than the children to be placed out, totalled 364. Visits and reports on the homes selected are made by both official and volunteer inspectors.

One of the most notable results of the council's work is the reduction of mortality among illegitimate children from 27 per cent. to 4.58 per cent. All illegitimate children, whether destitute or not, are in its care and it has charge of 231 lying-in homes.

Pay for the Baby's Board.

This plan of paying the board of State Children is common in some Continental countries. It seems a good plan. With the nameless baby, fair treatment, constant supervision, and an open businesslike arrangement are the best guarantees for the baby's interests. The foster-mothers, who are the paid guardians, grow, it is said, quite fond and proud of the child, which is certainly not improbable. And while a good mother is everything to a child, a bad mother is worse than nothing; and it does not do to insist, if the mother will go back to the gutter and stay there, that she shall keep her baby there with her.

The Feeble-Minded Mother.

No fact in this whole field of work is better known than the fact that a great many of the mothers of nameless babies are feeble-minded. And Infant Mortality among these children is the greatest of all. Inasmuch as one of the other Reports of this Department is upon the Feeble-Minded, nothing more need be said here than that this is one more reason why the Province should provide for the permanent Care and Control of the Feeble-Minded, namely, that it would lessen Infant Mortality. It would seem only reasonable to ask that any feeble-minded woman who becomes a mother in any hospital, house of refuge or charitable institution, or elsewhere, should at once be reported to this Department.

How to Save Half of these Babies.

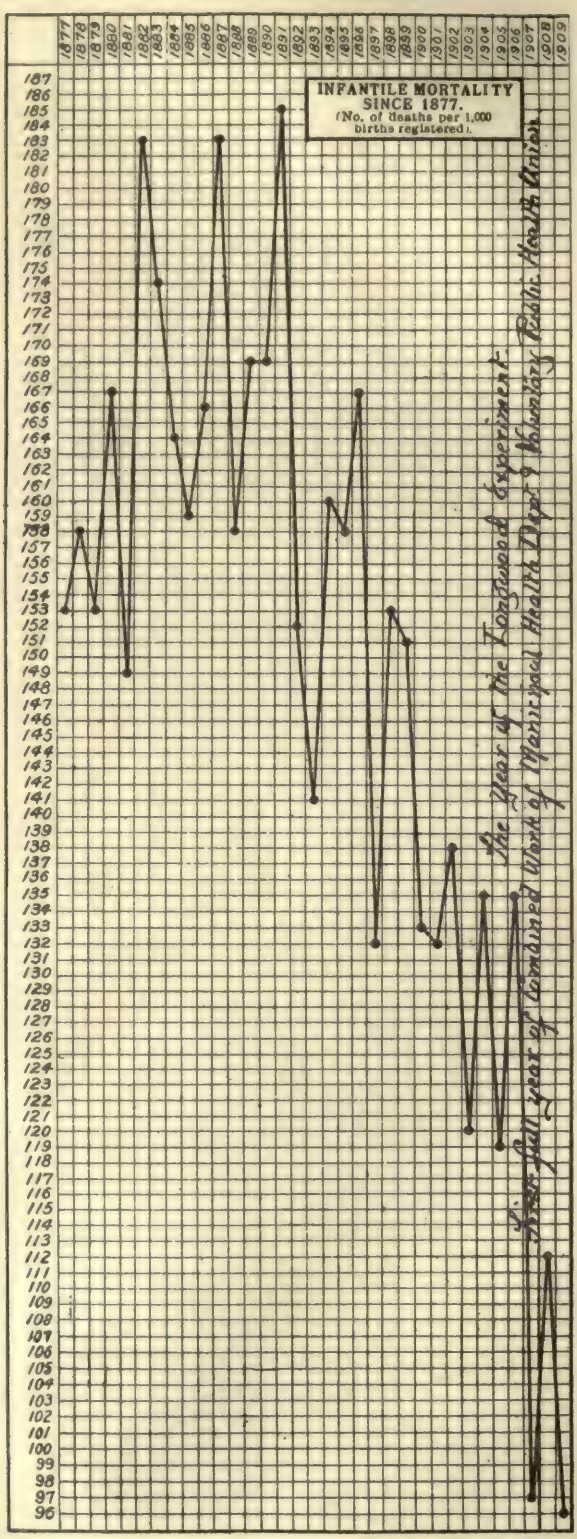
This has been done in Huddersfield, where Infant Mortality has been reduced to half of what it was, as the following diagram shows:

How it was Done.

This was not done without long effort, disappointment borne and difficulties overcome.

In 1903 Mr. Benjamin Broadbent was Chairman of the Health Committee, Dr. S. A. Moore was Medical Officer of Health, and the latter in 1903-4 undertook at his own initiative an inquiry into the causes of Infant Mortality, and showed that of all the deaths of infants in Huddersfield in 1902 under one year of age—

23 per cent. were from preventable causes.
56 per cent. were from doubtfully preventable causes.
20 per cent. were from non-preventable causes.


INFANTILE MORTALITY
SINCE 1877.
(No. of deaths per 1,000 births registered).
The Year of the Fortnight's Experiment.
Last full year of combined Ward of Municipal Health Dept. & Voluntary Public Health Union.

This was the starting point. The next stage was the incubation period, otherwise known as the Committee Stage. On receiving Dr. Moore's Report, a Sub-Committee was appointed on Infant Mortality by the Health Committee. At its first meeting, December 14th, 1903, Dr. Moore was instructed to go on with his investigation and make a Report, which he did, the report being the fruit of much work and research, and being presented on May 9th, 1904. At this point the vital energy of the Committee ebbed and never more could a quorum be got! So like committees!

The leader, however, Mr. Benjamin Broadbent, still remained. The Committee had a name to live, and was dead, but he was alive. He was asked to be Mayor, and he accepted because he thought he could do more as Mayor for the Infant Mortality question than he could as Chairman of the Health Committee. It was then that the famous Baby's Own Promissory Note plan occurred to him, for, following the example of the French Mayor of Villiers le Duc, he gave a birthday present of £1 to every baby born in Longwood from November 9th, 1904, to November 9th, 1905, secured by a legal Promissory Note, due one year from date of birth. By those chiefly concerned—the mothers—after the first incredulity was overcome there was exactly the welcome which the new Mayor hoped for. The mothers never misunderstood in the slightest degree, never resented the interest shown in their babies, never dreamt than an attempt was being made to bribe them, or to purchase by money mother's love and care. They took it in kindness and sincerity, as it was meant.

There was, however, a very serious practical difficulty in getting to know when and where the babies were being born, and then of giving to the mothers the promissory notes securing the birthday present to the baby. When the first baby was announced the question was, "Who will take the promissory note?" The Mayor's sister came to the rescue and took the promissory note. That was the commencement of the work that has grown into the Huddersfield and District Public Health Union. As the number of babies increased it became impossible for one lady, however self-sacrificing and devoted, to look after them all. So in course of time another sister of the Mayor's began to help. By degrees, as the number of babies grew, so did the number of lady visitors. Thus a committee, without any formal appointment, formed itself, and by the end of the year it was a thoroughly efficient, compact working committee for the district of Longwood, with a complete and intimate knowledge of every baby and mother. A committee that thus grew of itself has naturally proved to be quite permanent, and it still exists as one of the district committees of the Huddersfield and District Public Health Union.

Then the defunct Infantile Mortality Committee came to life again.

The Public Health Union.

We have here the beginning from which grew the Huddersfield and District Public Health Union, a union of Municipal and Public Health Agencies, represented by the Mayor, the Medical Health Officer and the Municipal Sub-Committee on Infant Mortality, on the one hand, and on the other the Mayor's two sisters and all the ladies who volunteered, forming a Committee of Lady Visitors. The Public Health Union was inaugurated at a meeting in the Mayor's Reception Room on June 30th, 1905.

But not yet did all the difficulties end in this work which has made the name of Huddersfield known throughout the world. There were meetings and meetings —the Report was referred back. There were delays of six months at a time because

this and that was not ready. There were amendments and there was opposition to the salaries of the two medical ladies who were made Assistant Medical Health Officers, and so on and so forth; but at last the work began to go, with the result that everyone knows.

The following is a brief outline of the scheme, which could easily be adapted to the needs of any town or city or municipality in Ontario where people can *keep on*. That is the great necessity in Public Health work—*keep on.*

THE WORKING OF THE HUDDERSFIELD SCHEME.

The Huddersfield work against Infant Mortality is framed on a very simple plan.

The subject was first examined in detail as a whole. All the problems involved were gone into carefully. The various means of prevention both in England and on the Continent of Europe were ascertained and considered, and there emerged one clearly defined principle of preponderating importance on which to base all action.

The *mot d'ordre* is: *"Help the mother to nurse her infant herself in her own home."*

1.—Notifications of birth reach the Medical Officer of Health within 48 hours of the time of birth.

2.—Two Lady Assistant Medical Officers of Health visit the *homes,* enquire, advise, and help.

3.—The notifications are sent every Monday to voluntary workers—ladies who supervise, visit at intervals, and help *in the homes.*

4.—If the baby does not thrive, and is not under medical care, the case is referred to the Medical Officer of Health, and appropriate action is taken.

The Health Department of the Corporation is the central part of the organization. The official staff for this purpose consists of the Medical Officer of Health and two Assistant Medical Officers of Health. The two latter are fully qualified and duly registered medical women. Nearly the whole of their time is given to the work in connection with Infant Mortality, and the Medical Officer of Health exercises a general direction and supervision of their proceedings.

There is also a Voluntary Association called the Huddersfield and District Public Health Union. It is worked by upwards of 100 ladies. There is a close and intimate relation between the municipal and voluntary portions of the work.

By a special Act obtained in 1906, the Corporation have power to require the compulsory notification of births to the Medical Officer of Health within 48 hours. This Act has been in operation since November 1st, 1906. So far there has been no difficulty in working it. The notifications within the time limit have been 94 per 100 of the total births. It is made as easy and as convenient as possible to make these notifications, a postcard is sufficient; stamped and addressed cards are given to midwives, and on request to doctors and others, from the Health Office direct, or through the Assistant Medical Officers of Health or the ladies of the Public Health Union. Immediately upon receipt of the Notification one or other of the Lady Assistant Medical Officers of Health proceeds to the address given and verifies it. If the case is one where help or advice is likely to be of use, the opportunity for such help or advice is given by the visit of the Lady Doctor. There is no power of entry, and the visit is not enforced in any way. Cards and leaflets

of advice on the care of infants, very carefully thought out, are generally left. Wherever practicable breast-feeding is urged, and if there is any difficulty in this respect help and advice are proffered. It is at the very earliest stage of her motherhood that the mother requires the best available advice, and it is just then that she most readily welcomes and asssimilates teaching as to the best methods for her child's welfare.

This first visit by the Lady Doctors is followed by repeated visits in all cases where the circumstances call for them. It is at this point that the utility of the Voluntary Association comes into play. For the purpose of this Voluntary Association the Borough is divided up into separate districts, corresponding as far as possible with the Wards, but taking as a basis for a separate district the number of births; about 150 births per annum is the approximate number for one district. Over each of these districts is appointed a Lady Superintendent, and with her are associated a group of Lady Helpers, varying in number in proportion to the number of babies likely to be born; it is not reckoned that any one Lady Helper should have more than 15 to 20 babies on her list.

After the first visit of the Assistant Medical Officer of Health, the lists of babies are divided up into the districts of the Public Health Union, and each week the list of babies is sent to the Lady Superintendent of the district. She, in her turn, divides up the list week by week amongst her helpers. Each baby is thus placed under the supervision of some one or other Lady Helper, and she is expected to keep each under observation, and do what she can for its welfare. In all cases where the child is not thriving and where no medical practitioner is in attendance, she is expected to send to the Public Health Department for aid. This does not involve any gift or charity. The visit is a visit to the baby, and for its health, and it is a rule that no dole shall be given in any shape. In cases of need the various official, religious, and philanthropic agencies of the town are communicated with, such as the Charity Organization Society and the National Society for the Prevention of Cruelty to Children and the Invalids' Kitchen. In cases of sanitary defects information is given to the proper health authorities. The visits of the Lady Helpers, like those of the Assistant Medical Officers of Health, are entirely optional on the part of the visited. A very simple formula defines the position—not to cross the threshold unless an invitation is given to enter, not to sit down unless a seat is offered, to remember that every "room" of a cottage has as much right to privacy as any lady's drawing-room. There is thus no danger of intrusion or of unwelcome interference. In some cases only a very occasional visit is required, but in others more frequent visits are necessary. Where a case seems to require help, and no doctor is in attendance, the Lady Helper asks the Assistant Medical Officer of Health to pay a visit. A free use is made of printed matter, and in every available way general interest is aroused in the welfare of the babies, as well as individual attention being given to each one.

The value of the interworking of the municipal and official with the voluntary is expressed in apt but perhaps too flattering terms by Mrs. Sidney Webb, who says, after a personal investigation of the whole scheme, "I am convinced that you have discovered the key to raising the condition of the poorer classes in this systematic and sympathetic health visiting—voluntary effort in a setting of municipal activity."

The whole aim and object of the Huddersfield work against Infantile Mortality is to keep mother and child together in the home, and to give help to mother and child alike. That help should be of the very best—hence the employment of medical women—it should be given at the time most needed—that is, in the

earliest days of life; it should be at hand whenever required—this the constant and regular and repeated visits of the Helpers make it easy to secure.

Cost of Work.

The Voluntary Public Health Union is worked without subscriptions, the expenses being merely for stamps and circulars. A demand will be made for subscriptions when required, but the time and energy of the ladies engaged in visiting is a sufficient tax without putting on them the work of collecting subscriptions or giving money themselves. As to the cost to the Corporation, the only expenditure has been the salaries of the Lady Assistant Medical Officers of Health, and a rather heavy amount of printing charges. The whole has not been equal to £400 a year.

October, 1907.

Benjamin Broadbent, M.A., J.P.,
Chairman.

S. G. Moore, M.D., D.P.H.,
Medical Officer of Health.

The Mother.

The welfare of the Community is bound up in the bundle of life with the mother. A community is, in the eloquent words of Burke, "a partnership not only between those who are living, but between those who are living and those who are dead, and those who are to be born." So the Community would need to "Concentrate on the Mother," to use the famous phrase of the Right Hon. John Burns.

Dr. Sidney Barwise, County Medical Officer of Derbyshire, thinks that money spent on the education and rearing of children should be deducted from income tax, and hopes that we shall see pious founders of endowments for mothers of healthy stock and good family. That is, families healthy on both sides who have been members of friendly societies or similar organizations for, say, at least two generations, and have not been "in trouble with the police," nor in receipt of Poor Law relief."

When the Mother Works.

An outstanding event of 1910 in the Infant Mortality field has been the stated enquiry into whether or not the mother going out to work affected prejudicially the health and life of the infant.

Common sense tells us at once that it does, if only because it is sure to interfere with the mother's nursing her infant at all, or at proper intervals, or if there is a cradle room to meet cases of exceptional hardship and necessity in a factory, at least factory work prevents the mother's giving that care and quiet nurture to the infant that can be got in a home, and only there. So strongly was this felt by the Conference on Infant Mortality of 1906 that a resolution was passed by them asking legislation to increase the time of the mother's absence from work after childbirth required by Section 61 of the Factory and Workshop Act from one month to three months. There is considerable difference of opinion as to whether the change would be a help, and the Home Office has set on foot an investigation by requesting the Medical Health Officers in industrial centres to make enquiries as to the physical, social, and economic effects of the employment of women before and after childbirth, and in the following November a conference of these Medical Officers of Health was held at the Home Office. The result of the conference was that

arrangements were made for detailed enquiry on settled lines in several industrial communities with regard to births occurring in 1908. The particulars it was decided to collect included the mother's age and occupation, the mode of feeding the child, the age at death in fatal cases and the social conditions of the household. Distinction was to be made of women working in factories and workshops, those industrially employed at home, those otherwise employed (such as hawkers and charwomen) outside the Factory Acts, and those engaged in domestic duties only. These reports are now coming in.

The Medical Officer of Health of Birmingham, Dr. John Robertson, has just presented a very valuable report to the Birmingham Corporation. The actual investigations were entrusted to Dr. Jessie Duncan, who had the assistance of two women health visitors. The district selected for the enquiry covered an area of 289 acres and had a population of about 40,000 persons. The infantile mortality rate in 1908, in one portion, was 169 per 1,000 births, and in the other, 214 per 1,000, compared with 145 per 1,000 in the whole of Birmingham. Every baby born in the district during 1908 was visited. A schedule of enquiry was filled in, and close contact was kept with the mothers during the year, each baby being weighed when it was twelve months old. Incidentally, as might be imagined, the work of the ladies engaged in the enquiry was found to be of great value in producing a better condition of affairs in the homes. Some of the children were lost sight of during the year, but specific details were obtained of 1,212 mothers, 601 of whom were not industrially employed and 611 who were so employed.

As regards the actual deaths which occurred among the infants, the mortality was at the rate of 190 per 1,000 births among those children whose mothers were employed either before or after childbirth, while it was at the rate of 207 per 1,000 in the case of those whose mothers were not industrially employed. No doubt, as Dr. Robertson points out, the additional income brought in by the mother had an important influence in the prevention of poverty, which is one great cause of a high infantile mortality. Furthermore, many women who go to work are thrifty and energetic, and are determined not to get below the poverty line nor yet to neglect their home duties. The deleterious effect of poverty upon the mother as well as upon the infant is emphatically urged by Dr. Robertson, who makes an eloquent appeal for the establishing of some institution from which food could be supplied to hungry expectant mothers and to mothers who are nursing their infants, and are themselves badly nourished.

Dr. Robertson himself, however, points out that the number of cases investigated is too small to allow of any absolute conclusion being drawn from them. And it would appear that there is an abnormal situation in [illegible] Birmingham when it is remembered that about 50 per cent. of the [illegible] Surely there are very few districts where half the mothers [illegible] and we may hope, if we do our duty, to prevent this in Canada.

Dr. Robertson says that the figures dealt with in this report relate to women, many of whom are in a state of poverty, and, as already pointed out, this alone has such an evident pernicious influence on the health of the mother and her offspring that the influence of industrial employment is to a considerable extent marked. Bearing this in mind, and taking into consideration our previous investigations on somewhat similar lines, it may be said that in Birmingham the type of industrial employment in vogue does not appreciably influence the health of the mother or her infant when the standard of comparison is that of women in equally poor circumstances who are not employed industrially.

"While this is the opinion I have come to from an investigation of the facts in these poverty-stricken districts, I do not for a moment maintain that such industrial employment is free from all harmful influence. The mere fact that it prevents breast-feeding in the majority of cases is, in my opinion, a reason for some State interference. Here, however, it appears to be a question in this Birmingham area as to whether the additional poverty which would be occasioned by preventing mothers from working for, say, six months after a birth would not be the greater of two evils."

That is, the conclusion of Dr. Robertson is that the economic factor dominates the maternal employment factor in infant mortality. There are those who hold that, under existing economic conditions, any further State interference with the industrial employment of married women would aggravate rather than alleviate the very evil which the supporters of such interference would seek to remove.

Perhaps so. But then these economic conditions should not exist, and we must bend our energies to prevent them from arising at all. Miscarriage and premature births, as every doctor knows, are not infrequent results of overwork, and women who are not able to rest and take care of themselves until the baby is six weeks old, suffer often from uterine disease and its consequences.

As Sir John Simon says in his Investigations Into the Sanitary Condition of England, 1859-1865: "In proportion as adult women were taking part in factory labor or in agriculture, the mortality of the infants rapidly increased."

Nursing.

August forms the Eiffel Tower of the infant mortality year, as shown in the diagram. The same diagram shows also the value of maternal nursing. How insignificant the number of deaths among the babies who had maternal nursing as compared with those fed in any other way. This is *the* way to prevent infant mortality.

Enemies.

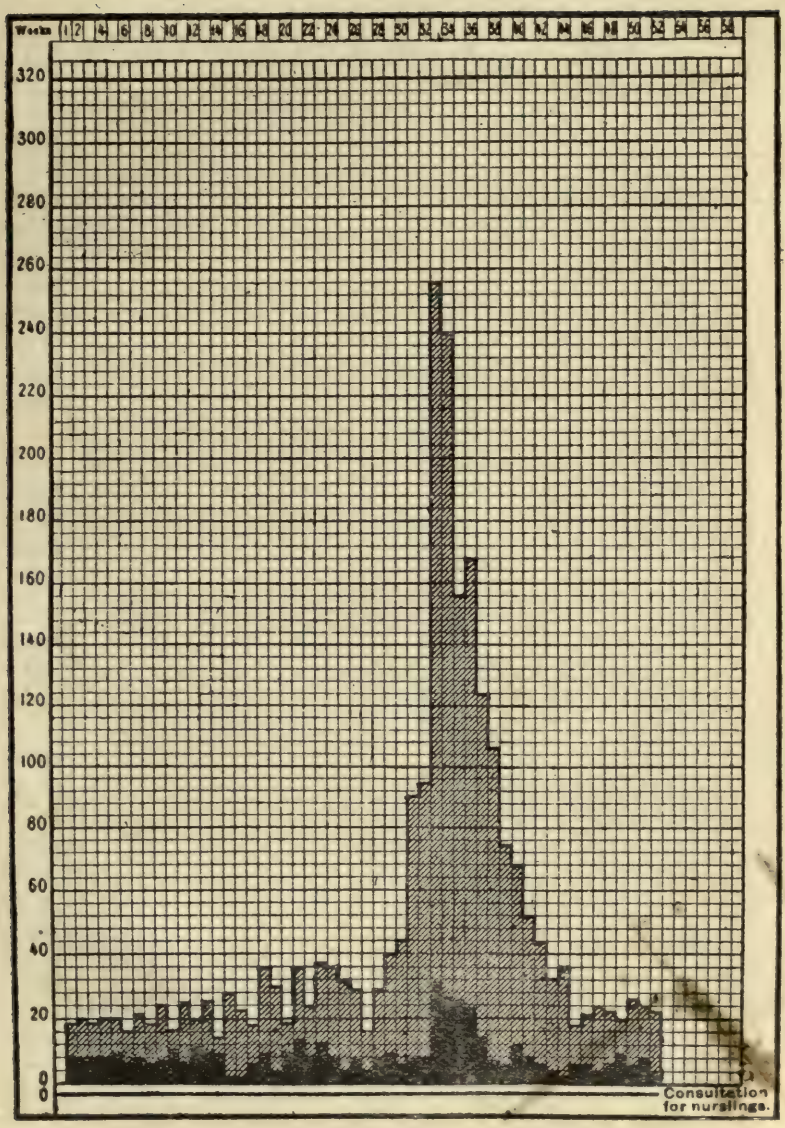
But now that the Health Visitor banishes by her persuasion the deadly "Comfort," or "Dummy," and the fatal long-tube bottle, we are beginning to feel that some babies are saved by this advice alone.

More Babies Nursed.

And the fact that everywhere any attention is drawn to the necessity, the number of babies nursed by the mother largely increases, is a very hopeful sign. Probably 90 per cent. of babies, or more, could be nursed at the mother's breast. Baron Kanehiro Takaki, Surgeon-General of the Imperial Japanese Navy, states that 89 per cent. of the infants in Japan were breast-fed.

Too Much Artificial Feeding.

But hand-feeding of sucklings has for years past been increasing as compared with breast-feeding. The indications in this direction are numerous and distinct; the increase in the number of patent and artificial foods for infants of suckling age and their wide advertisement, the unfortunate frequency with which they have been recommended not only by lay friends, but also by the nurses, midwives, and chemists, and even by doctors, the light-hearted manner in which not only the



The highest point (256) of the mortality is in the month of August. The black portion of the diagram indicates the number of deaths among infants nursed by the mother, and the lighter portion represents the number of deaths among infants fed in any other way.

fashionable but also the healthy working-class mother prematurely weans her babe unconscious of the risks it will run, the ready way in which the married factory girl returns to the factory and leaves her newly-born infant unsuckled, the promiscuous distribution of leaflets instructing mothers how to artificially feed their babies, and so on. These and other indications clearly point to the influences that have been at work, and it cannot be imagined that the result has been other than the increase of hand-feeding."—(Sykes.)

Nursing a Legal Right.

The right of the child to be nursed by the mother is recognized by at least one decision in our English Courts of Law. In the Divorce Court.—April 24th, 1906.

In the case of McLaglen v. McLaglen, Mr. Justice Bargrave Deane ordered a baby which had been forcibly carried off by the father to be returned to its natural food at its mother's breast. The natural right of the child prevailed over the common law right of the father.

Dr. Sykes' Enquiry.

In St. Pancras, in 1904, it was ascertained that only about 60 per cent. of infants were wholly breast-fed; in 1905 the proportion had risen to 66.8 per cent. The actual numbers in each year were 457 breast-fed of 772 cases enquired into during 1904, and 530 of 793 cases in 1905.

In 1905 fuller enquiry was made into 277 cases of prematurely weaned infants, and the ages and causes of weaning ascertained. In 71 cases there was only partial weaning. Of the 206 cases in which there was premature complete weaning, it was found that 78 were weaned at birth, 73 within the first month, and 55 subsequently (mostly during the second and third month).

Of these cases prematurely weaned, it was found that from one-half to two-thirds were probably preventable. Now, if of the 33.2 per cent. of sucklings not wholly breast-fed in 1905, one-half can be prevented, it follows that 83.4 per cent. can be wholly breast-fed, and, if two-thirds can be prevented, nearly 89 per cent. can be breast-fed.

Milk.

No consideration of the subject of Infant Mortality, however brief, would be complete without some reference to the question of Milk Supply.

Infection.

There are three milk dangers to the baby, and the first is infection. Dirt is infection; that is, poison. Dirt in milk means millions upon millions of germs, and these increase in the milk with incredible rapidity. Hence the success which attends all efforts to reduce infant mortality by enabling the mothers to give their babies clean cow's milk at about the age of nine or ten months, which is the best time for weaning to begin.

Contamination may occur while milk is in the hands of the dairyman, the distributor or the consumer, and each one needs careful education and supervision by the health authorities, so that the milk may not poison the baby. Infected milk in the cause of the deadly diarrhœa of infancy.

Adulteration.

The second danger is adulteration—adding water, removing the cream. Now cream, that is fat, is the most important ingredient of the milk as far as the health and the growth of the child is concerned. This is the case, even with the mother's milk, as was shown in July, 1910, before the British Medical Association in London, by Dr. Olive M. Elgood. At the request of Dr. Robertson, M. O. H. for Birmingham, her investigation was done in the Laboratories of the University of Birmingham, and the first thing proved by the experiment is that "The constituent of human milk most important to the healthy growth of the child is fat." So it is in cow's milk. The cream is of the utmost importance to the baby.

"It appears to be certain," says Dr. Newsholme, "that deficiency of cream in milk is especially provocative of rickets; and we know that throughout the country some of the chief vendors of milk 'tone down' their milk to a low standard, regardless of the mischief which their action involves. By the use of such milk, and of impoverished condensed milk, many infants throughout the country are being partially starved, and the results are to be seen in excessive child mortality and in weakly youth, often with deformity of limbs. They can also be seen in deformity of pelvis and in resultant unfitness for future child-bearing."

Preservatives.

Water is not the only adulterant used, as in the following cases, quoted by Dr. Fremantle in *The Child:*

A certain medical man in a London suburb found his child gradually losing flesh. Several of the chief physicians of the day were unable to find any sign of disease or any cause of the trouble. One finally asked the father about his milk. It was a supply from a large dairy company, who guaranteed its quality. "Do not trust that guarantee, but have it analyzed," was his advice. The milk was analyzed, and contained 5 gr. of boracic acid to the pint. Recent experiments show that 7 gr. of boracic acid in a day will upset the digestive faculties of an adult. The milkman was fined £25.

Milk for the Mother.

The best way in which to modify cow's milk, at least until the baby is nine month's old, is by giving milk to the mother. To take one or two cups of milk about half an hour before nursing the baby is the best plan to increase the quantity of the maternal milk supply.

Child Hygiene as a Division of the Health Department.

Early in 1908 the Department of Health and the Bureau of Municipal Research in New York City worked out some experiments, and ascertained that it would be a good thing to place in charge of one head all the duties of the Health Department which concerned the welfare of children.

Five of these have a relation to Infant Mortality:

(1) The control and supervision of midwives.
(2) The instruction of mothers in the care of babies.
(3) Supervision of foundling babies boarded out in homes.
(4) Inspection and sanitation of day-nurseries.
(5) Inspection of institutions harbouring dependent children.

The Division was organized at once under Dr. Josephine Baker, and began work January 1st, 1909. At the end of one year's work the results were gratifying—for there was an actual saving of 797 babies' lives, and the Infant Mortality was the lowest in the history of the City.

Midwives.

Forty per cent. of the births in New York City are attended by a midwife only. This is a large proportion. We do not seem to have any system of registering and licensing midwives in Ontario. This is a necessary thing, and should not be longer delayed. The careful supervision of midwives has helped much to reduce Infant Mortality, and has greatly lessened that terrible disease ophthalmia neonatorum.

Other Plans.

The Instruction of mothers and of the senior girls in schools is known to have helped greatly. The placing of every baby in a home is the modern method of solving the Institution problem. The constant supervision of Day-Nurseries and everywhere else that babies are cared for is the price of a reduction in Infant Mortality, and it is cheap at the price. But the striking reduction in Infant Mortality, and the saving of about a thousand lives, are the eloquent proofs of the success of this plan. Organization is good—all but indispensable. There is something without which all organization is rather useless, and that is—a man or woman with a heart and mind that can direct and lead the Staff and unify the work. Such a heart and mind one sees in the Report of the Medical Officer to the Local Government Board, in the achievements of the Mayor of Huddersfield, and in the work of Dr. S. Josephine Baker, Chief of the Division of Child Hygiene, Department of Health, New York City.

The Creche and Infant Mortality.

Where the employment of mothers outside the home is unavoidable, at least under present circumstances, and the mother must be out of the home for hours at a time, a well-conducted creche to which the mother can come to nurse a little baby at least twice or three times during the day helps to prevent Infant Mortality. The creche can take better care of the child than some neighbor, or very young child, often the only alternative.

Dr. Thomas gives the following in *Public Health:*

The creche is usually healthier and cleaner than the child's home, the treatment is more enlightened, and the method of feeding better adapted to the child's tender years.

Every creche can show children who have come there miserably anæmic, and suffering from rickets, whose health has visibly improved after some weeks of the creche treatment.

At the creche the child is taught cleanliness and good habits, becomes stronger and healthier, and is given a better chance in life.

Creches are under medical supervision, and the promptitude with which a case of sickness is treated often prevents more serious consequences.

The mother is required to bring the child clean; better methods of feeding are learnt, and the cleanliness and discipline of the creche insensibly react to the advantage of the home.

What Kills the Babies.

This diagram shows the chief causes of death among children under two years of age and the ratio of each cause to the total deaths in this age division. In each 100 deaths among children under two years of age 37 are caused by diseases of the digestive system; 23 by the impure air diseases; 19 by defects and accidents at birth; 9 by acute contagious diseases; 3 by diseases of the nervous system; 2 by tuberculosis; 2 by violence; 1 by venereal diseases, etc. 70 per cent. of such deaths can be avoided—with proper care:

Teach the Girls About the Baby.

There is a general feeling that we shall not make the progress that we might in preventing Infant Mortality until we teach the proper care of the baby where we teach everything else, viz., in the school. Dr. Janet Campbell's monograph is a step in the right direction, and no doubt already—though it was only issued in the end of 1910—not a few English girls have learned from it. It is only necessary that Dr. Campbell's ideas should reach the teachers, and they will be anxious to impart this knowledge to their pupils. A Bill on this subject was introduced into the House of Commons in July, 1910, by Dr. Addison, providing that all children attending public elementary schools shall, each week during school term, be provided with simple instruction in hygiene and the care of health, while each girl of the age or 12 years or more shall be adequately instructed in the care and feeding of infants. Every year about 120,000 children die in England before completing twelve months of existence as the result of improper feeding, while large numbers suffer from inadequate attention and maternal ignorance. The death-rate is very much increased in neighborhoods where the mothers have to go out to work and can only nurse their offspring morning and evening. The infants, between these periods, are looked after by older children of the family or girls hired for the purpose. Nearly one-third of the infant death-rate is due to various complaints which arise from improper feeding.

Dr. Addison says: We have no opportunities for teaching mothers of the present day, although good work is being done in some places by voluntary agencies. I consider it very necessary, in order that the next generation of mothers should understand how to feed their children properly, that instruction should be given to girls at an age when they will not be possessed by various prejudices. We find it very difficult to persuade many women of thirty years of age or more to give up feeding their children on sop and other deleterious substances. Milk is the only proper food for an infant, and I am persuaded if we can get girls to believe this, and to remember even this only, we shall reduce the infant death-rate in the next generation by 25 per cent.

Dr. Reed says: "Of course, there are many contributory causes of excessive infantile mortality, most of them preventible, but there is one which far exceeds all others in potency—namely, the prevailing ignorance among mothers as to the proper feeding of infants.

"No real headway will be made, however, until the rising generation of both sexes are systematically taught elementary health principles at school."

Dr. R. A. Lyster, the School Medical Officer to the County of Hampshire—a country in which the low infant death-rate of 83.6 per 1,000 births in 1908 may well be a subject for envy with less fortunate districts—has the same message. He says in his report for 1901:—

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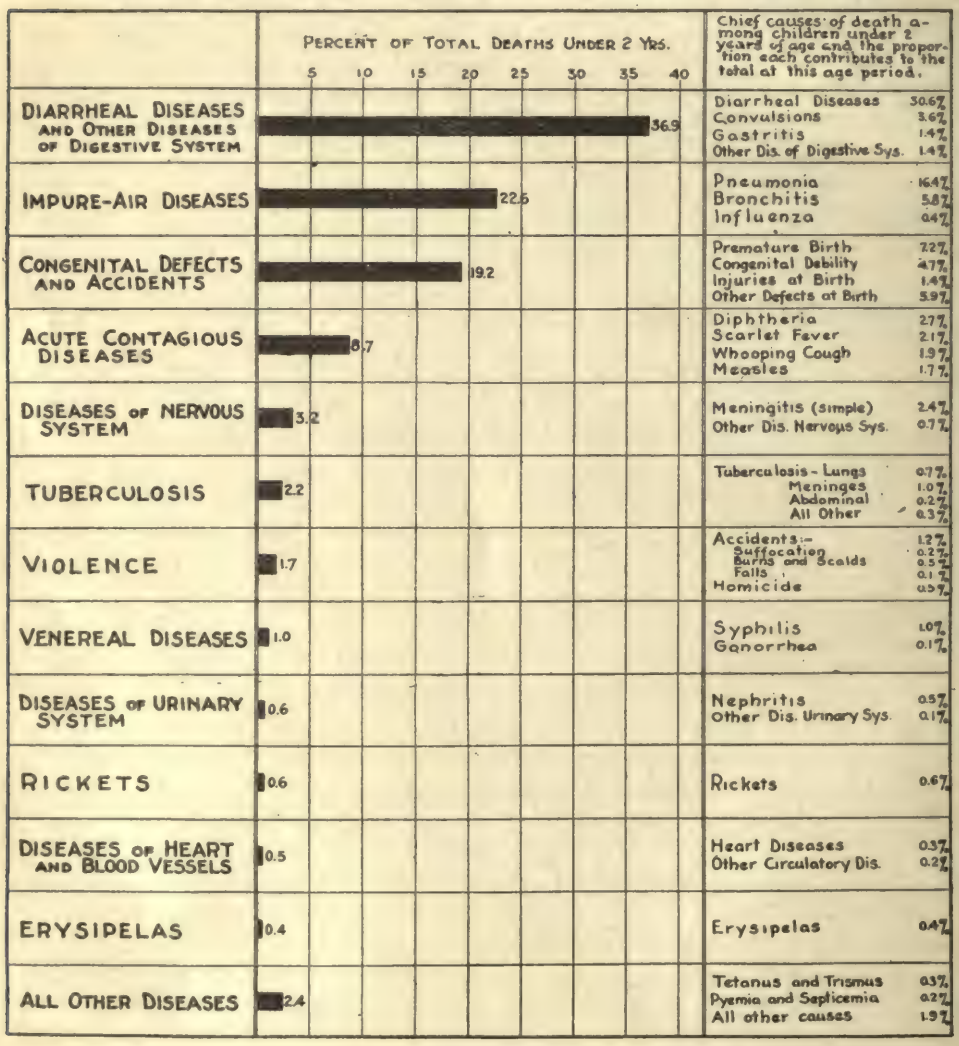

From the Bulletin of the Department of Health, Chicago.

"Until some very radical change takes place in the instruction given to girls of 11 years old and upwards, there will very little hope of improving the general habits of the people, or of decreasing the present deplorable wastage of infant life."

The Lancet says: "The amazing ignorance among the poor, which is one of the chief causes of our high death-rate among the infants, after the long years in which compulsory education has had a free play, is of itself eloquent proof of the non-practical character of the teaching which has gone by the name of education."

Registration.

To reduce Infant Mortality, we must first have an accurate, complete and satisfactory registration of births. Prompt and complete registration is of manifest importance. How can this be accomplished? The best legislation on the subject is comprised in the Notification of Births Act, 1907, in Great Britain, and the "Model Law," approved of by the American Medical Association, the American Public Health Association, and by the United States Census Office. Another Act of great importance is the Children's Act, 1908, on Infant Life Protection.

Notification of Births Act.

The most important provisions are as follows:—

1. The provisions of this section shall have effect in the area of any local authority in which this Act is adopted, by that authority, in accordance with the provisions of this Act,

(1). In the case of every child born in an area in which this Act is adopted, it shall be the duty of the father of the child, if he is actually residing in the house where the birth takes place at the time of its occurrence, and of any person in attendance on the mother at the time of, or within six hours after, the birth, to give notice in writing of the birth to the medical officer of health, of the district in which his child is born, in manner provided by this section.

(2). Notice under this section shall be given by posting a prepaid letter or postcard, addressed to the medical officer of health at his office or residence, giving the necessary information of the birth within thirty-six hours after the birth, or by delivering a written notice of the birth at the office or residence of the medical officer within the same time; and the local authority shall supply without charge, addressed and stamped post cards containing the form of notice to any medical practitioner or midwife residing or practising in their area, who apply for the same.

(3). Any person who fails to give notice of a birth in accordance with this section shall be liable on summary conviction to a penalty, not exceeding twenty shillings: Provided that a person shall not be liable to a penalty under this provision if he satisfies the Court that he had reasonable grounds to believe that notice had been duly given by some other person.

(4). The notification required to be made under this Act shall be in addition to and not in substitution for the requirements of any Act relating to the registration of births; and any registrar of births and deaths whose sub-district or any part thereof is situate within any area in which this Act is adopted, shall at all reasonable times have access to notices of births received by the medical officer of health, under this Act, or to any book in which those notices may be recorded, for the purpose of obtaining information concerning births which may have occurred in his sub-district.

(5). This section shall apply to any child which has issued forth from its mother after the expiration of the twenty-eighth week of pregnancy, whether alive or dead.

(6). Any expenses incurred by a local authority in the execution of this Act shall be paid as part of the expenses of that authority, in the execution of the Acts relating to public health, and in the case of a rural district council shall be paid as general expenses.

It would seem to be better, in this Province, to provide for notification and registration at one and the same time and place. The Act seems to have worked well in Great Britain: It is in force in 195 areas of local government, namely:—

(1). The whole of the administrative county of London, comprising the City of London and the 28 metropolitan boroughs.

(2). 46 County Boroughs.

(3). 46 non-County Boroughs.

(4). 57 Urban Districts.

(5). 17 Rural Districts.

In some instances, prosecutions have taken place under the Act. There is a general feeling that the registration of births should be paid for by the Government, or other authority. The doctor ought to be entitled to a fee. Of course, some trouble must be taken by someone to get the machinery in motion. Dr. Matthew Hay (M.O.H., Aberdeen), says, that when the Act came into force he sent a summary of its provisions to all the medical men and nurses in the town, pointing out what they were called on to do.

"For a time there were omissions, and there are omissions still, but they have been reduced to almost vanishing point. We get from each registrar in the city a return of the births registered with him each week, and these we carefully compare with the notifications we receive. Of course, that information was available for us before, but then as parents are allowed three weeks to register, and generally wait until the last day before doing it, the child might be dead, or might by bad nursing have received irretrievable damage before we heard of the birth had we relied solely on that source.

"Thirty-six hours are allowed under the Act for notification being made, but we allow them a week. When, however, we come across a late notification we send a note to the parent, drawing his attention to the penalty he has rendered himself liable for. In the same way in cases of failure to notify we send a punitive letter to the parent, who is of course the first party mentioned in the Act. The parent who receives such a note generally writes or comes here in fear and trembling to explain that he did not know such a duty was imposed upon him. I point out to them that they are supposed to know the law. The result is that these people speak to their doctor about the trouble they have got into, and saying he should informed them what to do. A doctor naturally does not like to have differences with his patients, and accordingly he makes it a point in all further cases to inform the parent or the nurse of the necessity for notifying the medical officer of the birth and of the penalty to be inflicted for not doing so. In this manner, therefore, the medical men are drilled, and the efficient working of the Act secured.

"What medical men contend is that they receive no fee for notifying. I think they ought to be paid, but of course we have not the making of the law, but only the administration of it."

A Registrar Required.

Another important point is to charge some one with this duty and appoint him to perform it. A Registrar is required. Sometimes such an official puts things

at once on a proper basis. This depends on the kind of man who is Registrar. Some Registrars make a house to house visitation every little while to verify and discover all births. In Detroit, when the new law was put in force, nearly three times as many births were reported in the first six months after the Act went into force as there were in the six months before. There were found in Michigan 224 births never reported at all.

American Model Law.

The following are the most important provisions of this law:

Be it enacted by the Legislature of the State of ————

Section 1.—That the State Board of Health shall have charge of registration of births and deaths; to prepare the necessary methods, forms, and blanks for obtaining and preserving such records, and to ensure the faithful registration of the same in the township, cities, counties, and in the Central Bureau of Vital Statistics at the Capital of the State.

Section 2.—That the Secretary of the State Board of Health shall have general supervision over the Central Bureau of Vital Statistics which is hereby authorized to be established by said Board, and which shall be under the immediate direction of the State Registrar of Vital Statistics, whom the State Board of Health shall appoint within thirty days after taking effect of this law, and who shall be a medical practitioner of not less than five years' practice in his profession, and a competent vital statistician.

Section 12.—That all births that occur in the State shall be immediately registered in the districts in which they occur, as hereinafter provided.

Section 13.—That it shall be the duty of the attending physician or midwife to file a certificate of birth, properly and completely filled out, giving all the particulars required by this Act, with the Local Registrar of the district in which the birth occurred, within ten days after the date of birth. And if there be no attending physician or midwife, then it shall be the duty of the father or mother of the child, householder, or owner of the premises, manager or superintendent of public or private institutions in which the birth occurred, to notify the Local Registrar within ten days after the birth, of the fact of such a birth having occurred. It shall then, in such case, be the duty of the Local Registrar to secure the necessary information and signature to make a proper certificate of birth; provided, that in cities the certificate of birth shall be filed at a less interval than ten days after birth, if so required by municipal ordinance (or regulations) now in force or that may hereafter be enacted.

Where is Ontario?

We do not find the name of Ontario in the following list. Why not? It may well be doubted whether we get 90 per cent. of our births registered, and we need that number to "count" with the others. This may be one explanation of why our infant mortality is so high. The births are not registered. One hundred and fifty-nine per 1,000 for Toronto (still-births not included) is a terrible death-rate. In England it is only 109.

In the international tables given each year in the Report of the Registrar-General of Births, Deaths, and Marriages in England and Wales, vital statistics are given for many successive years for the following countries:

England and Wales.
Scotland.
Ireland.
New South Wales.
Victoria.
Queensland.
South Australia.
Sweden.
Russia.
Finland.
Germany.
Austria.
Hungary.
Roumania.
Bulgaria.
Servia.
Western Australia.
Tasmania.
New Zealand.
Ceylon.
Jamaica.
Denmark.
Norway.
Netherlands.
Belgium.
France.
Switzerland.
Spain.
Italy.
Japan.
Chili.

The registration of births was really primarily to obtain the necessary record for legal purposes. But in obtaining these there were unconsciously laid the foundations of sanitary science. The beginning of Registration of Births and Deaths in 1836 ushered in the era of sanitation in which we now live.

Reasons for the registration of births and deaths may be stated as follows:

(1) Knowledge of the movement of population (demographic uses).

(2) Protection of the lives and health of the people (sanitary uses) and

(3) Protection of the rights of the individual and of the community (legal uses).

This has been well expressed by the preamble to the Registration Law of 1851 in Pennsylvania:

"*Whereas,* From the death of witnesses and from other causes, it has often been found difficult to prove the marriage, birth, or death of persons, whereby the rights of many have been sacrificed and great wrongs have been done; and

"*Whereas,* Important truths, deeply affecting the physical welfare of mankind, are to be drawn from the number of marriages, births, or deaths that during a term of years may be contracted or may occur within the limits of this extensive commonwealth; therefore ——"

In the resolution passed by Congress for 1903, approving of such legislation, we have a brief statement of the reasons for the registration of births, as follows:

The registration of births and deaths at the time of their occurrence furnishes official record information of much value to individuals; and

The registration of deaths, with information upon certain points, is essential to the progress of medical and sanitary science in preventing and restricting disease and in devising and applying remedial agencies; and

All of the principal countries of the civilized world recognize the necessity for such registration and enforce the same by general laws.

To these more general reasons may well be added another:

Registration of births is a great help in reducing infant mortality. School hygiene might help us here. It is evident that an effort should be made to impress on parents, teachers, nurses, and doctors the great importance of notification and prompt registration of every birth.

And probably some payment should be made for this. They did that in Huddersfield. One shilling was the sum paid there.

But even the direction of public attention to it would do great good.

The Time Has Come.

In many labors we lose our pains. The cause was not worth while, or the time had not come. Not so here. The time has come to act. The Report of the Registrar-General for Ontario for 1908, page 9, says that in Ontario there were: Births, 55,388; deaths under one year, 6,895; infant mortality rate, 125 per 1,000.

Table showing the total number of Births, also of Deaths under one year of age and ratio of such deaths per 1,000 births in each City in Ontario, 1908. Still-births included.

CITIES.	Births.	Deaths under one year old.	Ratio of such deaths per 1,000 births.
Belleville	248	49	197.6
Brantford	597	95	159.1
Chatham	229	41	179.0
Fort William	442	110	248.8
Guelph	307	57	185.7
Hamilton	1,822	349	191.5
Kingston	395	71	179.7
London	1,024	205	200.2
Niagara Falls	214	47	219.6
Ottawa	2,035	521	256.0
Peterborough	459	78	169.9
Port Arthur	392	95	242.3
St. Catharines	294	50	170.1
Stratford	301	41	136.2
St. Thomas	334	62	185.6
Toronto	7,938	1,535	193.4
West Toronto	433	83	191.7
Windsor	395	67	169.6
Woodstock	204	20	98.0

A Great and Holy Cause.

This cause is worth while. As Lord Robert Cecil said at Huddersfield last June:

It is a great and even a holy cause. Child life is that on which the whole future and prosperity of the country depend. If there grew up a carelessness about infant life it was a sure sign of the degeneration and degradation of the people of the country. No greater social work had been done by the preaching of Christianity than the great change it had made in the minds of men with regard to the claims of infant life. To this day in some heathen countries, in China, for instance, it was the custom of the people to put out to die any of their children who were for any reason an inconvenience to their parents. Under the laws of the Roman Empire it was no offence to kill a child under one year old. It was Christianity and Christianity alone that taught that the life of a child was as sacred as the life of any man or woman, that every child born had an immortal soul, and that the man or woman who through negligence or wickedness sacrificed the life of a child was every bit as guilty as a murderer who killed a full grown man or woman. He earnestly commended the work, not only to the people of Huddersfield, but to the people of the country, and he earnestly hoped they would never desert the cause they had so nobly and so successfully taken in hand.

WAKE UP, ONTARIO!

Ontario should take up this cause. There is not very much difference between the murderer and the one who stands by and sees those die whom he could save. The infant mortality rate must be reduced, beginning in the cities.

I have the honor to be,

Sir,

Your obedient servant,

HELEN MACMURCHY.